The Builder.

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The Public Health (London) Act, 1891.

WHATEVER may be the political merits of the present Government, — and we say nothing either for or against it on this point, for this journal does not deal with party politics,—there can be no doubt that the Ministry of Lord Salisbury will hereafter receive praise from the hands of the impartial historian for the efforts it has made in the cause of sanitary reform. The main credit for the good work which has been done in this respect is largely due to the President of the Local Government Board. But as a Ministry as a whole is blamed for the faults of its individual members, so also it receives praise in respect of their successful work. The Municipal Corporations Act has always been regarded as one of the most important achievements of Lord Melbourne's Administration as a whole, though the individual Minister chiefly responsible for it was Lord John Russell. In the same manner, the credit for the important sanitary statutes which have recently become law, and which have been carried through the House of Commons by Mr. Ritchie, must be regarded as belonging to the entire Administration of which he is a member. We dwell somewhat on this point because men are too apt to judge the Administration which from time to time governs the country entirely by their more purely political and party measures, by their conduct of foreign affairs, and by their naval and military administration. Familiarity, says the proverb, breeds contempt, and it may be that it is because the health of our houses and our towns is so constantly present to the minds of all that we are apt to look upon the work of the Minister who carries useful measures whereby the health, and therefore the happiness, of the community is increased, with some inattention, and to underrate its importance.

At the time of the third reading of the Bill we drew attention to some of the new provisions in it (see *Builder* for July 4 of this year); and we now return to the subject in part to call attention to a useful publication of the Act, with Introduction, Notes, and an Index by Mr. MacMorran.* A publication like this comes very opportunely, for although it concerns them so nearly, yet it is certain that a large number of well-educated inhabitants of the Metropolis are still ignorant of the existence of the Act the name of which stands at the head of this article. Yet it is, in a word, a new code, containing the law by which the health of the Metropolis is preserved, and by which this huge community is able to exist. It consolidates a number of isolated statutes and parts of statutes; it also lays down new rules, and it is thus in every sense the legal code of health of London. In many instances it re-enacts the old sections verbatim, in others it re-introduces them with alterations and modifications, and in some places, as we have pointed out already, there are to be found entirely new rules. For example, the acts relating to the consumption of smoke are consolidated with very slight alterations. Then one part of the code "deals with the removal of refuse, and the most important change in that part is that which abolishes the duties formerly incumbent on the owners or occupiers of premises to cause the footways and water-courses adjoining their premises to be swept or cleansed in time of snow or the like." This is a change which will come home to the ordinary occupier, who, if he were law-abiding and well-disposed, spent his money for the benefit of his neighbours, and, if he were the reverse, gave passers by wet feet in melting snow without remorse. No doubt the efficient cleansing of the footways will necessitate further expenditure by the local bodies, but the householder will be saved the cost which has hitherto fallen on him in winter time. Turning to a point more important to the health of the community, it should be pointed out that "under the heading of the provisions as to water, there are one or two important and novel provisions. One of these is that if a water company cut off the supply of water from any dwelling-house they must give notice to the sanitary authority." We quote, as we have already done, from Mr. Macmorran's introduction to his work on the new Act. This introduction shows in clear and informal language the chief features of the statute. It will be plain to the most ordinary reader; but it must be confessed that it is written in a slipshod fashion. In the above extract it will be observed there is a sentence, "if *a* company *cut* off, &c., *they* must," &c. We may as well in this place make the further remark that the notes throughout are clear and sensible, that there is an excellent index, and that the book is a useful edition of the new Act. This is sufficient criticism on a modest and practical work.

Continuing our notice of some of the more important new provisions to be found in the Act, we may cite in its entirety section 50. This states that "Every Sanitary Authority shall make by-laws for securing the cleanliness and freedom from pollution of tanks, cisterns, and other receptacles used for storing of water, used, or likely to be used, by man for drinking or domestic purposes, or for manufacturing drink for the use of man." The good intentions which underlie this piece of legislation are admirable, and it is to be hoped that it will improve the water supply for domestic purposes; but there can be no doubt that it will be most difficult to carry out in practice the by-laws which may be made, for it is clear that they will be more or less a dead letter unless tanks and cisterns are inspected from time to time. The fact is that this section reveals a difficulty in the success of all sanitary legislation after a certain point. Large numbers of persons have, in truth, to be protected against themselves. Nothing can be more certain than that many ignorant, —and yet, in their own way, well-meaning, —people would resent as a piece of tyranny any attempt to make them keep their cisterns clean. Still, the powers that be must, to use a common phrase, keep on "pegging away." Yet again, this section is noticeable from another point of view. It shows the advance which is being made in sanitary matters. We have not exactly reached the millennium, but such sound and health-giving legislation would astonish not only our ancestors, but many worthy persons still in the land of the living. It is historically noticeable, and it is doubtless only the forerunner of yet better things to come.

It is time to turn to yet another new provision, which is to be found in an earlier part of the Act, in sec. 4, sub-sec. 2.

* "The Public Health (London) Act, 1891. With Introduction, Notes, and Index." By Alexander MacMorran, Barrister-at-Law. London: Shaw & Sons. 1891.

By this it is enacted that a sanitary authority may require a person to take measures to prevent the recurrence of a nuisance. The first sub-section of the same section is concerned with the actual abatement of a nuisance, and is almost identical with the twenty-first section of the Sanitary Act, 1866. Now, after a period of twenty-five years, we advance a step further, and the Legislature enacts not only that a man must abate a nuisance, but that he must take steps to prevent its recurrence. This fourth section is indeed an excellent example of the general character of the new Act, since it shows it as a statute embodying old provisions, while at the same time it improves or enlarges them.

Another new section which claims attention forms part of the portion of the code which deals with the enforcement of the law. By section 107 (1) every sanitary authority is to "appoint an adequate number of fit and proper persons as sanitary inspectors." This sub-section is taken from the Nuisances Removal Acts of 1855 and 1860. Then, coming to section 108, sub-section *d*, we find an entirely new and important provision, which touches the qualification of the sanitary inspectors, and is intended to prevent the appointment of incompetent men. It is in substance that the sanitary inspector appointed after January 1, 1895 (the date is noticeable), shall be a holder of a certificate of such body as the Local Government Board may approve, showing that he has by examination proved himself competent for such office, or shall have been for three consecutive years preceding 1895 a sanitary inspector or inspector of nuisances of a district in London or an urban sanitary district out of London containing a population of not less than 20,000 inhabitants. It is difficult to see why, since the Act comes into operation next January, the qualifications stated above are not necessary until three years later. It has further to be observed that the efficiency of the section must largely depend on the way in which it is regarded by the Local Government Board.

It would be impossible in any reasonable space to touch on all the various changes,—many of minor importance,—to be found in the Act before us. It would be well if every intelligent inhabitant of the metropolis were to provide himself with a copy of it, so that he may understand his duties and his rights in respect of the things which concern the health of the community of which he is a member. It is enough that we have called attention to the importance of the statute, and to some of its details; it now remains for our readers to make themselves more minutely acquainted with them.

DECORATIVE ART OF JAPAN.—II.

BY AN ENGLISH RESIDENT IN JAPAN.

I HAVE digressed against my will into pictorial art, but in this respect the two arts rest on a common basis. The native education of the Japanese gives them the power of tracing magic curves of beauty, enhancing the value of an art which has many other charms to depend on,—the charms of colour, of light and shade, and of its subjects. How much more must it enhance the value of the art which depends almost entirely on beautiful lines themselves; to which colour is only subordinate, and light and shade only incidental. And this art, this art of mere detail, which not a few pass by in contemptuous silence, is practised, as I hope to show, to perfection by the Japanese. With them, as with the other nations of the East, the weaving of lines into pleasant devices became not only an art, but a fine art. Behind the play of the lines there is the play of fancy; behind the mere pattern there is deep suggestion. The emblematic origin of ornament seems never to have deserted it, but to endue it even now, in these unemblematic days, with a curious power. From the emblems and their use the decorative faculty in man has learnt the art instinct. It has learnt that things we see give the highest pleasure when they speak of things unseen; that the eye is quickly satiated with looking unless the brain has food for reflection too. And so this art of mere detail, though it fall very far behind, must take the lowest place among the arts, because the limits which compass it are narrow, because it has not to interpret the voice of nature as she speaks from field and hill, nor to reveal the devil or the god in man, yet can find depths within its limited domain. It can weave suggestion into its figures, and make the lines it uses speak.

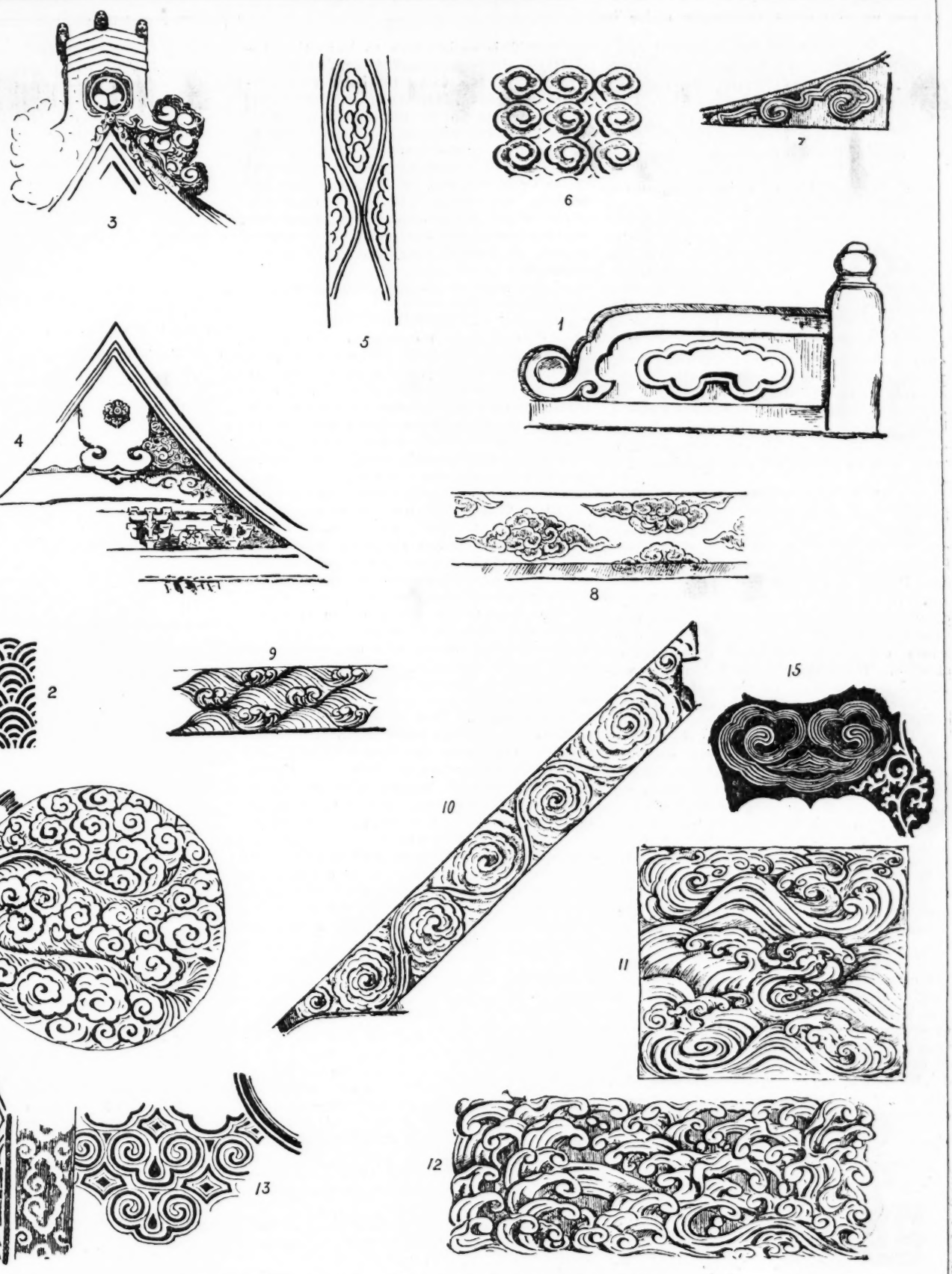
To revert to the subject in hand. The Japanese have both the power of drawing, and the knowledge of the subtle influence of beautiful curves, and they press into the service of their art everything which will produce them. The clouds have suggested a hundred different kinds of ornament; the waves a hundred more. I do not mean to assert for a moment that the Japanese can claim to have been the first to use cloud forms and wave lines for decorative purposes. They are quite common in Chinese art, and probably have not been without their influence on the art of other nations. The idea certainly came to Japan, with many another idea, from China; but I am dealing with Japanese art as I find it. I am concerned not with the origin, but the development; and assuredly the versatility and originality of the national art are nowhere brought so vividly to the front as in the infinite variety of ways in which they have used these two inspirations.

Fig. 1 is the termination of a low stone balustrade, pierced with a cloud form, which is, perhaps, the most frequently used in architecture. The balustrade is about 18 in. high, and surmounts a low terrace leading up to one of the tombs in Shiba. It is pierced with clouds at regular intervals throughout its whole length. The form itself is full of repose, and adds its quota to the calm dignity which envelopes the tomb of the mighty dead. There is a proper fitness about everything Japanese, a due order and decorum to be observed down to the smallest detail. It is not a mere question of ornamenting a terrace wall, but of ornamenting this terrace wall which surrounds the tomb: a more elaborate ornament would be quite out of keeping in so solemn a sanctuary. The pomp and pride of a great Shogun, the dignity of his office, the magnificence of his power, are fittingly emphasised in the golden glitter of the shrine; but after that is past, it is equally fitting to remind those who come to worship that the glory has departed, that life is full of all that appertains to glory, but death is full of peace; and so the magnificence of the memorial resting-place gradually dwindles by imperceptible degrees until we reach the tomb itself, which stands unadorned in the quiet simplicity of death. The walls surrounding the enclosure of the tomb are covered with the quiet wave pattern (fig. 2), which, perhaps, is the best known in the West of this class of design. It is worked on sheets of copper, about 9 in. square, each square containing one complete wave. The lines are firmly chased with a blunt chisel, rather more than an inch apart, and of sufficient depth only to make a noticeable undulation in the metal, and the whole surface painted black. The play of light and shadow is exceedingly quiet and reposeful, and the suggested fancy of the calm sea of death inevitable.

Yet another use of cloud-forms is to be found in figs. 3 and 4, in which I have attempted to give some slight idea of the powerful gable end of the roof of the library building at Shiba. The black roof, with those mysterious curves which have baffled many an artist, sweeps down from the blue sky in almost overwhelming grandeur. The building itself is a simple rectangle, but crowned with this wonderful roof, it is of most noble proportions. Above the point of the gables at either end is blazoned the crest of the Tokugawas; and this is, as it were, cut off from the lower world by a halo of restless clouds, which appear again under the gable. To make the illustration intelligible, I should explain that the lowest line of fig. 3 corresponds to the upper line of fig. 4; the height from the ground and the glare having somewhat impeded my drawing the gable as a whole. The front of the gable is white; immediately in the shadow of the clouds is a massive beam, slightly ornamented with scroll-work, and below that again a series of complicated bracket ornaments, both of which are leading features of Japanese temple architecture.

In figs. 5, 6, and 7 are to be seen other variations of cloud forms. Fig. 5 comes from a many-sided wooden pillar of dark red lacquer, in which the lines are simply cut and gilt. Fig. 6 is a bold diaper carved in very high relief, which finds a fitting place in the shadows of the eaves of a gateway: it is heavily gilt, the depths of the carving being painted green, cream, and crimson, so that the lines of the same colour run diagonally: fig. 7 is a bracket, supporting the end of a roof, of gold and red on a warm grey ground. Yet another variety, and one of the most effective of the cloud ornaments, fittingly carved to embellish the beam of a roof, is given in fig. 8. The ground is of gold, the clouds being painted red, green, brown, and grey, each in three shades: the effect is rich in the extreme. There is more vigour in the conception of this design than in the one given in fig. 5, and it is in its nature more appropriate for outer courtyards, where it is frequently to be found. Though often repeated, the forms are never traced, each therefore has some little individuality imparted to it. It is worth observing, too, how the upper stratum, so to speak, adapts itself to its position on the beam: the lower stratum overlaps on to the under side, the design being continued there.

I pass from the waters above to the waters below. The most conventional of all the wave-patterns has been already noticed in fig. 2; another variety of this is sometimes seen with only two lines at the top of the wave, the lower part being left plain. I have called this the wave-pattern, in accordance with universal custom; conventional method of drawing the scales of fish gives however the same result; tradition has assigned the wave origin to it, and tradition is not often far wrong. I always feel, however, on very delicate ground when searching for the origin of designs which are not apparent on the face of them; but it becomes almost a quicksand when one begins to discuss their national origin, and to trace their passage from one nation to another. This is a question which must be considered hereafter. I think we are too apt to ignore the fact that two minds, working in the same grooves and with the same materials, may very easily hit upon the same idea, more especially when the materials, as in the case of rigid conventional work, are so very limited. And indeed this pattern is familiar even to the uninspired builders of the West; a latticed wall composed of semicircular tiles resting in tiers one upon the other is quite common in England. Its inspiration and origin in the East are, I think, however, quite beyond question. In fig. 9 is another, but less rigid, form of wave-pattern, which, so far as my studies have at present taken me, I have only noticed once. It is carved in very low relief on the beams which support the roof over the water-tank in one of the Shiba courtyards, and covered thickly with red lacquer; and once more we find the ornament suited to the thing ornamented. The beautiful scroll in fig. 10 appears to have the same origin. It comes from the gable-beam of the richly-decorated stable of the Sacred Pony at Nikko, the shadows in the carving of the ripples being coloured red, green, and pale purple. The waves of the sea are often used in much bolder fashion, whole panels being carved with them. Figures 11 and 12 come from porches in Shiba, and show two different methods of treatment. The first is in very high relief, in red lacquer against a gold background; the second in very low relief, in red lacquer, without any other colouring. The composition of this panel seems to me very



Sketches of Japanese Ornamental Motifs: Suggestions from Nature.

charming and unique, and exhibits at its highest that remarkable power of line disposition which is characteristic of Japanese design. They are the turbulent wave panels of which I have already spoken.

Fig. 13 shows the detail of the famous white pillars of the outer gate of the temple of Iyeyasu, at Nikko. We have here another variation of the cloud form, very vigorously carved, and making, with the complementary pattern in the interstices, a complete and imposing ground-work. The pillars are cut by the walls of the porch, which are covered with the diaper shown in this figure. A thin band, on which the cloud reappears in yet another form in very shallow carving, separates the walls from the pillars; and on the pillars themselves are placed at irregular intervals some very fine medallions, one of which is given in fig. 14, the border cutting the cloud diaper abruptly, as shown in fig. 13. I have seldom seen anything more perfect in its way than the composition of this medallion. It is as good an example as could be found of the completeness of balance and harmony of the parts which are so characteristic of Japanese work.

The last example of the cloud form which I give for the present shown in fig. 15, is taken from the face of the elliptical pilasters within the Temple of Iyeyasu itself. The surface of the pilasters is of rich-toned brown lacquer; the "clouds" are very deeply incised, and are placed one above the other, so that they almost touch; they cover the entire breadth of the surface, which is about 9 in., and are lined with gold as shown in the figure, in imitation of a well-known lacquer made up of many layers, which are revealed by the deeply-carved pattern cutting through them.

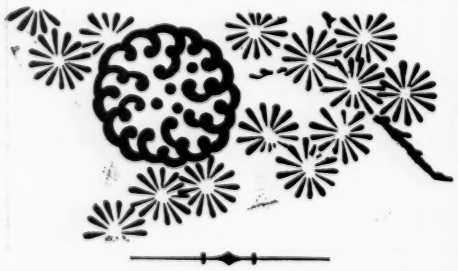
With everything pressed into the service of their art, as I have said, that art will in every detail reflect their surroundings. In the difference of their surroundings lies one of the chief causes of the attraction of Japanese decoration to Western eyes. The designer, at first instinctively, afterwards with deliberate purpose, allows his lines to flow into forms with which he is familiar. The common flowers of Japan are not the common flowers of the West; so the conventional flowers of their ornament are not the conventional flowers of ours. The ornament

pleases us who come transiently under its influence, in the same way as the flowers that are hawked about the streets delight us: in both cases it is the charm of novelty that first attracts us; afterwards, of course, the inherent charm of the flowers themselves. But the flowers of one country are not more beautiful than the flowers of the other; we do not institute invidious comparisons between the flora of the East and the West; but looking at the art which it inspires we forget the effect which the novelty has on our mind, and call it originality; we endow it with all the virtues attached to original conception. The subjects are new to us, and, therefore, charming; but the Tudor rose would strike a Japanese in the same way when he sees it at every turn in Westminster: that would be an original design to him. But it is conceived in precisely the same spirit as his own official chrysanthemum; and, from a critical standpoint, the two are of equal merit; neither should a Briton deliberately prefer the chrysanthemum, nor a Japanese the rose, as being better and higher art. In judging any art, we must not submit to be captivated by what is in its nature the most transient of its charms.

Two of the many flowers which the people hold in loving worship are the chrysanthemum, the *Kiku*, and the *Botan*, *Pæonia Moutan* of the botanists. With the former we, too, in England have become familiar; but the tree Peony, in its extreme beauty, is almost unknown to us. The night street-gardens, or flower-fairs, as their respective seasons come round, are full of them, and for a few cents every cottage is furnished with brilliant flowers. These two flowers hold a very prominent position in the ornament of the nation.

The chrysanthemum makes me turn naturally to the heraldry of the country; for it has been, in a rigidly conventional form, the national official crest for many centuries, sharing the dignity of imperial service with the *Paulownia Imperialis*. Before turning to the examples of their heraldic devices which I have figured, it is necessary to note one further point in what may be called the historic development of the art of ornament.

In the constant use of the brush lies the secret of the conventional character of a great proportion of Japanese ornament. The natural swell of a brush full of paint has long, and I think rightly, been considered as the source of many designs which are among the classics of ornament; it seems to have taught from earliest ages the method in which natural forms could best be adapted to decorative purposes, to have created the true spirit of conventional ornament. This is an old story, however, and need not be dwelt on here. It is sufficient to observe that it is as noticeable in Japanese work as it is in Grecian of older times. F. T. P.



New Theatre, Durham.—On the 12th inst. the new theatre, concert hall, and assembly rooms were opened at Durham. The new theatre is situated in the North Bailey. The theatre proper is approached by a flight of steps through swinging doors, which open so that the building can be cleared in a short space of time. The entrance is well lighted, and the walls are relieved by pilasters with figures. The theatre is capable of accommodating about 700 people. The walls are ornamented with plaster panels surrounded by a cornice. The gallery is situated over the entrance. The stage is 22 ft. by 17 ft. 6 in., and in addition to the theatre itself there is a supper or smoking-room, cloak-rooms, lavatories, dressing-rooms, and other apartments. The building contains also a kitchen with pantry, cellars, caretaker's-rooms, &c. Provision has been made for warming and ventilating the building. Mr. William Rushworth, of London, is the architect. Messrs. G. Gradon & Sons, Durham, were the building contractors.

NOTES.

IT is satisfactory to learn that the carpenters and joiners' strike is at last to be the subject of arbitration, and that in the meantime work is to be resumed. Mr. Macvicar Anderson, who, in his official capacity as President of the Institute of Architects, has been requested to act as arbitrator, possesses those qualities of tact, courtesy, and business knowledge which are especially requisite in carrying on such an arbitration, and the two parties concerned are to be congratulated on having submitted their case to so suitable an arbitrator, though we fear Mr. Anderson will find his task rather an arduous one.

THE manifesto relating to the wharf strike, issued by the Federation of Trade and Labour Unions, to which we referred last week as being nominally adopted and confirmed by upwards of twenty labour organisations, has still failed to affect the dispute to the extent anticipated. Indeed, only eight of the societies alluded to have taken any active part whatever, the majority having so little to do with the offending wharves that they are not likely to be called upon to do so. Their "moral support" could, therefore, be given without running much risk, and is of correspondingly slight value. As regards the industries more closely concerned, there has been a notable unwillingness on the part of many of the men to be mixed up in this dispute; the stevedores, in particular, being very undecided as to the desirability of taking part in the strike. They put off their decision until late on Tuesday night, when they announced their determination not to take any action. This is a great blow not only to the strikers, but also to the labour leaders. Owing to the fact that only two wharves are concerned (alternative methods of disposing of traffic consequently being left open), the inconvenience caused to the community at large is but slight, and the leaders probably calculated upon more outside sympathy if they could succeed in extending the area of the strike. They confidently anticipated that by means of the combination just now effected the desired end could be readily brought about, but they appear to have been mistaken.

THE restoration of the great altar screen at St. Albans is now practically complete, the figures on the east face having recently been fixed, and the hoarding removed from the lower portion facing the presbytery. We cannot say we like the Mansfield stone of which the figures are composed; it does not harmonise with the brilliant white of the setting. What a Mediæval designer would have done is now difficult perhaps to determine, but in all probability if he had ventured on colour at all it would have been in the elaborate decoration of the figures and drapery, and not an all-pervading salmon tone over the statuary. The weakest point in the restoration appears to us to be the treatment of the centre, more especially of the cross itself. In our issue of October 29, 1887, we gave a photograph of the screen as it then was, and in which the space which the cross occupied was a bold broad surface of stone with no ornament save a few pateræ on the canted edges. To have superimposed another cross of the same Mansfield stone as the figures seems a decided mistake. It does away completely with the fine contrast which it formed before with the delicate detail surrounding it, and to have made it of the same material as the statuary hardly suggests the harder material of which the cross, as compared with the figures, should have been made. Metal would here have been the best material, and its polished surface and brightness would have vastly increased the brilliancy of the whole, the general effect of which is at present somewhat tame. The figures themselves vary considerably in merit. They cannot of course pretend to be what is properly classed as "sculpture" in an artistic sense; they are Modern-Mediæval shop carvings. This seems to be the recognised way of doing these things at present, in this country at least. There are probably men among the ranks of our younger sculptors, men who are real artists, who would have been only too happy to have received such a commission as that, and Mr. Hucks Gibbs's munificent outlay would then have been attended with more satisfactory results.

EARLY last year, it may be remembered, an appeal was made by the Committee of the Cyprus Exploration Fund for money to begin work on the important site of Salamis. It was answered by donations to the amount of 800*l*. The report of the Committee, just issued, lies before us, and we may say it amply proves that the appeal was justified. At Salamis two main sites have been experimented on; both have shown that the fear expressed by many that Salamis would yield nothing earlier than Roman work was baseless. At a rise near the south of the city a very remarkable "find" was unearthed. Besides a miscellaneous confusion of broken terra-cotta and limestone figures and objects, small bronzes, porcelain seals, &c., the excavators lighted on a unique series of painted terra-cotta figures, some from 15 ft. to 19 ft. high, others only 9 in. The larger figures are all bearded, and show strong traces of Assyrian influence. The drapery is painted with a sort of scale pattern in red and black, and finished off with variegated fringes and borders. Interspersed in the scale pattern are human and animal figures of special interest because their style recalls the Tirynthian paintings. The colours of the draperies, hair, eyes, lips, and earrings are remarkably fresh. As the excavators point out, these painted figures should enable us to form some notion of the famous Cypriote embroidery, in which Acesas and Helicon of Salamis were acknowledged masters. The figures have been mended, as far as possible. Another site that has yielded promising results is the series of sand hillocks that now cover the eastern side of the ancient city. A large number of plain marble columns were found *in situ*, and their varying lengths and diameters prove that they had been taken from various earlier buildings to form part of a later construction. The low late wall in which they had been erected rested on a course of fine masonry of much earlier date, pronounced by Dr. Dörpfeld to be fifth or fourth century B.C. The antiquities discovered bore out this view. They corresponded to the two periods of architecture. On the one hand there were fragments of archaic limestone female figures, some of them with traces of colour; in the other, marble figures of Roman date,—a torso of Eros, a small river-god, a seated Serapis with Cerberos. These figures had all been decapitated by iconoclastic zealots. To the more famous bull's-head capital, found near the Agora, we have before drawn attention; it has been placed in the British Museum. All this year's sites have been rather tried than cleared; they promise well, but ample funds are needed.

THE arrangements for outdoor *in situ* lectures and museum demonstrations undertaken by the German Archæological Institute are now completed for the autumn and spring session. As, by the courtesy of the several directors, these lectures are so far as possible opened to all well-recommended travellers, it may interest our readers to know what opportunities they may look for in visiting Rome and Athens. In Rome, Professor Petersen lectures through November and December on Roman antiquities, and topography is undertaken by Dr. Huelsen. The course is to be repeated in the spring. A short course is to follow at Pompeii in the summer. We hope the very early summer, as Pompeii is unbearable in June to all but well-seasoned Italians. The date of this expedition is not yet fixed. In Athens Dr. Dörpfeld has begun already, and till the end of December he will take up week by week

some building or some topographical question in Athens, the Peiræus, or Eleusis. He reserves January and February for his own work; the course is repeated in March and April. In May he sets out for the Peloponnese, where each year the number of excavated sites is on the increase. So popular have these Peloponnesian archæological tours become that Dr. Dörpfeld has had to limit to twenty the number who accompany him. Beginning in December, Dr. Wolters takes the indoor work, going regularly through the museums, and dealing with sculpture and smaller antiquities.

ALL those who have had the good fortune to visit Athens during the past year are familiar with the beautiful statue of Themis which was discovered at Rhamnus and set up about a year ago in the National Museum at Athens. Those who must remain at home will welcome the somewhat tardy publication of this very interesting work of art in the last issue of the Ἐφημερισ Ἀρχαιολογική (1891, 3). The figure of the goddess is an impressive one; she wears a long chiton of very fine close-clinging material, and over it an ample himation of stitched stuff. The statue is excellently preserved: even the nose is intact; the chin is a good deal damaged, and the lower portion of both arms missing. Fortunately the pedestal also is extant. We learn from it the name of the sculptor,—a name hitherto unknown,—Chairestratos, son of Chairedemos of Rhamnus. From the basis we also learn that Megakles, a citizen of Rhamnus, dedicated the statue to commemorate a victory he had won as gymnasiarch of contests between men and boys and at Choragos. The statue has on the himation some slight trace of colour. It will be remembered that the ruins of two temples have been found at Rhamnus of different sizes and dates. Till lately it was supposed they were both dedicated to Nemesis. This idea is now, we believe, given up. The statue of Themis, found in the older and smaller of the two temples, seems to show that this temple was dedicated to her. Of subordinate interest is a second statue of about Alexandrian date, representing the priestess Aristonoë; it is dedicated by a man of the name of Hierocles, and the dedication is conjoint to Themis and Nemesis. A third statue, of smaller size, but finer work, represents a youth wearing a himation, and with the right hand uplifted; it is dedicated, with curious vagueness, to the goddess who owns the "temenos." Perhaps at that time they were halting between two titles, and the dedicator did not wish to be invidious. Still greater interest attaches to the remains (unfortunately only fragments) found in the larger temple, and unquestionably belonging to the basis of the statue of Nemesis herself by Agoracritos. They are of varied character—a horse's head, three female heads and one male head, a torso, and fragments of drapery. According to Pausanias (i. 33), Pheidias represented on the basis of the statue Helen being led by Leda to Nemesis, Tyndareus and his sons, and a man called Hippeus with a horse. Probably we have here the very horse of Hippeus; almost certainly in the three women's heads we have Nemesis, Leda, and Helen. Helen from the hand of Pheidias is, indeed, a great gift of time.

THE last issue of the Roman *Mittheilungen* of the German Archæological Institute (vi., 2) is marked by an important addition,—*i.e.*, that of a report of excavations, discoveries, and all matters of current interest connected therewith. Such a report has long been needed, as the official "Notizie degli Scavi" was of too detailed a nature for speedy reference. The report for this year begins with an account of two new museums devoted exclusively to national antiquities,—*i.e.*, the Museum of the Villa di Papa Giulio, outside the Porta del Popolo, intended to contain monuments which are of pre-Roman date, and also those found beyond Roman territory, and the Museum of the Terme Diocleziane, which is to be devoted entirely to Roman discoveries. The Villa Giulia Museum, which owes its existence mainly to Barnabei and the Conte Ad. Cozza, at present consists chiefly of antiquities found in and near Cività Castellana (the ancient Falerii) since 1886. It is shortly to receive the results of the excavations in the Necropolis, which extend nearly all round the city of Palestrina. The collection is to be arranged in strict historical sequence, and the position and character of the graves,—a matter now rightly held to be of the first importance,—will be made clear by numerous plans and maps. While the Giulio Museum will contain materials entirely new to the majority of travellers, the Museum of the Terme Diocleziane will gather together under one roof many antiquities already familiar, scattered about in the various Roman collections,—*e.g.*, various antiquities, notably some frescoes from a Roman house near the Farnesine, will be brought from the Kircheriano, always a very mixed collection; others, and especially the bronze of the seated boxer, will come from the Via Nazionale. In fact, the traveller will do well nowadays to visit first the two new Museums, and what of importance he does not find there, to seek in the old. Of course, this refers only to recent discoveries; the collections of the two Capitoline Museums remain undisturbed.

AT the present time, when movements in regard to technical education are on foot all over the country, and local bodies are considering how best to spend the funds placed in their hands for this purpose, it may be opportune to call attention to the successful working of the Keswick School of Industrial Art. It is most desirable that the local managers of schemes of technical education should obtain information and advice from those who, without Government assistance, and by mere energy and good management, have for some time past carried on technical schools. The Keswick School of Industrial Art was begun in the autumn of 1884. It was then simply a class for brass *repoussé* work and woodcarving in the parish room at Keswick, and was set on foot by the Rev. H. D. Raunsley, Vicar of Keswick. There is nothing like a satisfactory balance-sheet, and at the end of the third year this school had a balance in hand of £131. Information in regard to it may be found in a small pamphlet, which can be obtained at the school, and is a reprint from a paper published in the *Oxford University Extension Gazette* of August, 1890. There is also an article on the same subject to be found in "Murray's Magazine" for December, 1889, entitled "An Industrial Art Experiment at Keswick." Also reference should be made to a paper, "An Industrial Art School: its claims and needs," which is to be found in the report of the Liverpool Art Congress, October, 1888. It is, as we have said, most important that the funds in the hands of local authorities, to be used for technical education, should not be wasted. The subject is one by no means familiar to many persons in local places, and there is great danger that even well-meaning attempts may end in failure. It is therefore of the first importance that measures and plans which have already been found successful should be carefully studied.

THE *Revue Scientifique* of October 17 contains a short article on one of the seven wonders of the world which one does not hear much about at present, viz., the Great Wall of China. The article, by M. Martin, consists of a short critical summary of the principal accounts which have been given of the wall, comparing them with actual observation. Most of them seem to have been exaggerated; the wall, which was undoubtedly a great piece of engineering work for its time, having evidently greatly impressed the imagination of Mediæval writers. According to M. Martin, the wall is now in a very ruinous and irregular state, and has probably never been a continuous erection (though shown as such on many maps), but was built at points where the natural state of the ground afforded no facility for defence against an invading army. It was evidently the work of some ruler who was a man of genius and energy. The Chinese of the present day, says M. Martin, regard it with absolute indifference.

WHEN St. Giles' Cathedral, Edinburgh, was restored lately, under the superintendence of Messrs. Hay & Henderson, a built-up chapel, used as a lumber-room, was left untouched. The chapel stands to the east of the north transept, and is now open to view through a pointed arch which rises to the full height of the aisles. Messrs. MacGibbon & Ross have carried out the restoration in a most satisfactory manner, and have designed an addition to the cathedral, which is to be applied to the purposes for which the chapel was used. The addition in question is now almost completed; the new building takes the outward form of a mortuary chapel, and is placed to the eastward of the chapel above referred to. It embraces two bays of the choir, and rises to the height of the sills of the aisle windows. Messrs. MacGibbon & Ross have not (as Messrs. Hay & Henderson did in similar additions they designed, and which were added to the cathedral) adopted the detail of the late Mr. Burn, which is far from being satisfactory. A different phase of Gothic has been used, which, while harmonising with the remainder, forms a pleasing variety amongst the otherwise monotonous repetitions of the other chapel-like additions. The windows are square-headed, and filled in with cusped flowing tracery; and the detail, especially of the small angle ogee Pointed doorway, is of a characteristically Scottish description.

WE commented strongly last week on the absurdity of crediting Mr. Webster with "public spirit" for merely tapping the water in the Colne valley on to his own land and endeavouring to sell it for his own profit. This view is amply supported by the two letters in the *Times* of the 21st from Mr. John Evans and "A Hertfordshire Man," and the *Times* itself in a leading article took the same line. This is a curious example of the *laissez-faire* way in which the leading journal is edited in regard to such matters. In the report of the visit to Mr. Webster's "waterworks" the *Times* praised him for his public spirit. In a leader the next day it accused him of appropriating water which was not his own. The backstairs of the *Times* office appears to be so badly guarded that favourable criticisms can be smuggled into its columns by interested persons, to serve their own purposes, while appearing as an editorial expression of opinion; a kind of laxity which, with the influence the *Times* possesses, may sometimes have a very mischievous effect. As to the point at issue, we may quote the following from Mr. Evans's very pointed letter:—

"For the last fifty years, at not unfrequently recurring intervals, I have had, in common with other inhabitants of this district, to resist organised invasions of our water rights; and 250 years ago, in 1641, a scheme was broached for carrying water from Rickmansworth to St. Giles's-in-the-Fields, and a Bill was introduced into Parliament to authorise it.

As long as London grows, and as long as no new source of water supply is legitimately obtained, so long will attacks be made on the water rights of the districts surrounding the metropolis, and what is palpable robbery be palliated on the plea of necessity."

THE fall last week of Mr. Willing's hoarding at Hyde Park-gate, by which several persons were seriously hurt, ought to draw the attention of the authorities to the importance of keeping an eye on the safe condition of erections of this kind, not only under every-day circumstances, but in case of storm. A structure which is safe in average weather but is liable to be blown down in a gale is a "dangerous structure," and should be dealt with as such.

THERE appears to have been great jubilation in Woburn-place on Saturday last, on the part of Sir John Lubbock and his friends, over the removal of the gate in Upper Woburn-place, and we do not deny that it is for the public convenience that these barriers should be removed; but we should have liked to see some recognition of the claims of the tenants of houses adjoining the gate, who in our opinion have been very badly used in the matter. It was exceedingly obliging of the late Duke of Bedford to waive all claim to compensation; perhaps if his own residence had been protected from the noise of traffic by a barrier which was to be removed, he would have taken a different view of the matter. A correspondent says "Five years ago I was nearly taking a house close to that very gate, mainly on the ground that, in the landlord's words, 'it was as quiet as in the country.' Other considerations decided me against it, but had I taken the house in that expectation, on a twenty-one years' lease, where should I be now?" To many persons who have to live in London a quiet spot is one of the greatest blessings, and those who have taken houses with that object have every right to complain if their quiet is taken from them by the hand of the law with no compensation of any kind. This side of the matter appears to have been entirely lost sight of.

THE OLD HEKATOMPEDON AT ATHENS.

At a well-attended meeting of the Society for the Promotion of Hellenic Studies, held on Monday afternoon last at 22, Albemarle-street, Prof. Jebb, M.P., in the chair,

Mr. F. C. Penrose read an exceedingly interesting and learned paper on the old Hekatompedon at Athens. He said that until about seven years ago, when Dr. Dörpfeld discovered the site of an archaic temple lying between the Erechtheum and the Parthenon, archæologists almost universally saw in the large Doric entablatures built into the north wall of the Acropolis the fragments of the earlier Hecatompedon, upon the foundations of which the Parthenon was in a great measure built. Since then a new theory has been broached, claiming the entablatures referred to for the archaic temple, and attributing, by a bold hypothesis, the great sub-basement wall on the south side of the Parthenon to Cimon, the son of Miltiades, who had, it was imagined, intended to have built an entirely new temple on that site, and for that purpose had prepared the marble drums of columns which we see also built into the north wall of the Acropolis at some distance eastward of the entablatures. The object of the paper read before the Hellenic Society on Monday was to show that the older theory was the true one; that the entablatures could not have belonged to the archaic temple, but were exactly suited to the earlier Hekatompedon; that there was no ground for supposing that Cimon had anything to do with building a temple on that site; and that the marble drums referred to had been used as foundations of the north Acropolis wall by the orders of Themistocles when he went to Sparta to appeal against the proposed interference of the Spartans with the Athenians, as recorded by Thucydides, 1·93. This was the judgment of no less an authority than Colonel Leake.

Some doubt had indeed been thrown upon the application of the name Hekatompedon to any structure except the Parthenon; but an inscription had been recovered from amongst the pre-Persic relics buried in the soil to the south of the Parthenon, which established the fact that there had been an earlier temple of that name.

The great sub-basement wall contains evidences of the very highest importance for the proof that it is itself the sub-struction of that very Hekatompedon. This wall has evidently been extended in length on the flank eastwards and on the front northwards, and the points of departure are very clearly indicated by the change of workmanship, and admit of very accurate measurement, showing that the sub-basement of the original temple was 231·481 ft. long, and 104·253 ft. wide. On the flank, or longest wall, are a number of distinct marks at various distances from each other, but which, when examined carefully, form combinations having remarkable affinity to the columniation (the German word is a better one, *axweite*) derived from the length of the architrave stones found in the north wall. And of these there are two varieties, one belonging to the front, measuring 13·238, and the other (to the flank) measuring 12·587. Both lengths are found among the combinations of these marks.

Let the measurements commence from the extreme eastern point, and call this Y. Then call the first mark A, and so on alphabetically as far as T,—the last of the marks, and let the extreme western point be X.

We shall then find the following coincidences:—

Front Measurements.		Multiples of 13·238.
HL	26·454	26·476=2
MQ	26·450	
LP	26·243	
CJ	52·947	52·952=4
YG	66·263	66·190=5
BK	66·368	
KS	66·231	
YX	231·481	231·140=17½

Flank Measurements.		Multiples of 12·587.
YE	50·361	50·346=4
BG	37·830	37·761=3
CH	37·850	
DI	38·007	
EJ	37·893	
JP	37·600	
IM	25·246	25·174=2
HS	87·875	88·108=7
RX	87·874	
OQ	12·410	
ST	12·827	
Mean of the two latter	12·618	12·587=1

It is quite impossible to ascribe so great a number of coincidences to chance, and a relationship is at once established between these sub-basement measures and the north-wall entablatures, and it can be shown that in other temples of which the plans are known a close affinity exists between the proportions of the main subdivisions of the plan and the measure of the columniation. This had been tested on the Theseum, the Temple of Jupiter at Olympia, the Parthenon, and the temples at Ægina and Bassæ. In each temple there were many cases where the main subdivisions of the architecture were measured by multiples of their own columniation. In the case before us the sub-basement measures showed little or no affinity to the subdivisions of the Parthenon.

Without the help of these sub-basement marks, the reconstruction of the old Hekatompedon would have scarcely been possible, but with their aid the solution seems to offer a very high probability.

Given the extreme measures, breadth 104·253 ft. and length 231·481 ft., and the ordinary columniation for the front 13·238, and for the flank 12·587, and having found by various considerations that hexastyle, with sixteen columns in the flanks, was the probable disposition, it is first necessary to determine the distance of the centres of the second columns (calling the angle column the first) from the angle of the upper step. This, in the case before us, from the analogy of early examples, ought to be for the front about 15·080 ft. A combination amongst the marks of 15·054 offers itself for this place. Add together twice this dimension and three columniations and we obtain for the breadth of the front 69 822 ft. To make up the total breadth we should now require two margins of 17·215 each; but we find on the sub-basement a distance between two of the marks R and S = 17·272. We have, therefore, now composed our entire width = 104 366 to compare with the measured extent of 104·253.

The flank composes equally well, and when the proportions of the depth of the peristyles and the position of the Pronaos wall are selected by taking the mean of a great number of examples (the greatest weight having been given to the oldest temples), they are found to agree so closely with certain combinations of the marks that these points in the case of the outside columniations, from which, of course, all the rest are started, also the Pronaos wall, both inside and out, and the eastern or interior face of the posticum wall have simply to be *ruled up* to conform with the slightest possible modification to the requirements of analogy. Moreover, when this is done, the total internal length of the Naos measured from the posticum wall to the centre of the doorway becomes *exactly* 100 Solonian attic feet, the measure being 97·109, and the hundred Solonian feet according to the best authorities being 97·114. Whilst the total length of the cella becomes 144·844, that of the existing Parthenon is 196 390. Hesychius has recorded that the Parthenon was 50 feet longer than the temple which was burnt by the Persians, and it is clear that the peristyles would not form part of this comparison.

The width of the cella of the old temple was determined by an actual foundation wall which had been discovered under the floor of the Parthenon, and it was so placed that, supposing the Naos of the old temple to have been repaired after the Persian troubles, the Parthenon could have been built over it and around it without interference till the time almost came for its very latest finish. This has been done in the case of churches both in Mediæval and modern times. It was also shown that the foundations of the older temple, restored in the manner described, would form a very considerable part of those necessary for the walls and stylobates of the Parthenon.

After thus establishing the probability of an earlier Hekatompedon the new theory was combated. There were no *architectural* fragments built up into the sub-basement wall. In Cimon's work, the south wall of the citadel, there are many.

In the excavations south of the Parthenon marble drums were found similar to those referred to as built into the north wall. It was difficult to suppose that Cimon would have thus buried his own materials, but easy to suppose they had been so buried had they been prepared by the Piristratidæ for a rebuild of the stone and plaster Hekatompedon. The wall, too, must have been built before the filling in, which had been laid against it in perfectly even layers reaching up to the very wall. It was part of the new theory that the filling in had been utilised as scaffolding for the sub-basement wall as it rose. Would the perfect regularity of those layers have survived the handling and traction of those massive wall stones?

The site of the archaic temple was then considered. Four varieties of capitals had been found, agreeing exactly with the north wall entablature, and measuring at the necking 4·282 ft., 4·088 ft., 3·843 ft., and 2 790 ft.; and there was one block *in situ* on the north flank of the original stylobate, and some others not *in situ*, but nearly of the same width, which had belonged to the front or flank. Assuming the latter, the mean width of the flank stylobate would be 5·265 ft.

From the analogy of Corinth, the front stylobate might have been a little wider than the flank, namely, 5·345, and the diameter of the column proportional to such a stylobate would be, according to the same analogy, 4·830. If we consider from the mean of the early example, most indulgently applied, what base diameter is due to the upper diameters derived from the capitals, we should find that the 4 088 capital would require a base diameter of 5·399 ft.; and this was without using the 4·282 capital, which resembled it in all essentials. There were also other objections to the use of these entablatures on the site of the archaic temple.

If the Olympic Heræum had been taken into account, and combined with the example at Corinth, the stylobate would be 5 482. But as neither the Temple of Jupiter at Olympia, nor that at Ægina, has any excess of stylobate, it seems right to omit it, especially as there is such a strange variety in the diameters of its columns.

There was no objection to their use (even including the 4 282 cap) on the stylobates of the Hekatompedon, placing the larger capital on the fronts (possibly as the angle column), and the 4·088 cap on the flanks, with the 3·843 cap for the Pronaos or Posticum, and the 2·790 cap in the Naos.

But was there no other possible solution of the archaic temple except by claiming these refractory materials? An Ionic peristyle of eight columns in front, and sixteen on the side, would divide the spaces equally well, giving a slight preponderance of intercolumnium to the fronts. In the late excavations on the Acropolis, a large Ionic capital was unearthed exactly suited by its size for the peristyles of this temple. At the same time stress was laid on this point, viz., that the acceptance or otherwise of this theory respecting the Ionic order used in the archaic temple, had extremely little to do with the main contention of the paper which was that the north wall entablatures had belonged to the temple burnt by the Persians on the site of the Parthenon.

A confirmation of the views above given was drawn from a different and distinct science, namely, Astronomy. Mr. Lockyer had shown in his lecture in May last to the Society of Antiquaries, and also in *Nature* in the numbers for April 16, May 7 and 21, and June 4, that the orientation of the Egyptian temples was determined by the point on the horizon at which certain con-

spicuous stars rose or set. Careful observations in Greece had shown that in the earliest times, at least, the same principle prevailed. Since the days of Hipparchus it has been known —though probably not by the ancients in the times under consideration—that, owing to what is called the *precession of the equinoxes*, the places where the stars are seen from any point to rise or set, slowly change, and in the course of several centuries do so to a very considerable extent. There are cases in Egypt where the doorways of temples have been altered to prolong the period of observation, and in other cases new temples have been built alongside of older temples, with a slight divergence of axis for the purpose of following the same star in its *precessional* displacements. There are at least two places in Greece where this seems to have happened—namely, at Rhamnus, and in the case of these two temples on the Acropolis. But there is also evidence in several other temples of the connexion of their orientation with a star. When the subject has been more fully worked out, this fact seems to offer a very hopeful clue for determining with a considerable amount of accuracy the dates of the foundation of the *earliest temples*. It would be premature to mention exact figures, but there results from this inquiry a high probability that a temple occupied the Parthenon site long before the Persian invasion.

A second paper was read by Mr. Lewis Dyer on the Vitruvian description of the Greek theatre, about which we may have something to say when it is published in the *Journal* of the Hellenic Society.

THE ARCHITECTURAL ASSOCIATION:

THE PRESIDENT'S ADDRESS.

The first ordinary meeting of this Association for the present session was held on Friday, the 16th inst., in the meeting-room of the Royal Institute of British Architects, 9, Conduit-street, the President, Mr. F. T. Baggallay, in the chair.

The minutes of the last meeting having been read and confirmed,

Mr. H. W. Pratt proposed the adoption of the annual report and balance-sheet of the Committee, which appear in the new "Brown-Book." The opening paragraphs of the Report are as follow:—

"The Committee has to record the events of a session chiefly remarkable from the fact that a new Constitution and By-laws,—prepared by a specially-appointed committee,—have been adopted by the Association, and that the Committee has thus been enabled to take some necessary steps in arranging for carrying into effect the new scheme of education adopted at a general meeting held at the close of session 1889-90.

As soon as the new Constitution and By-laws were passed, the Committee appointed a Reorganisation Committee, consisting of the following members:—Messrs. G. P. Armstrong, F. T. Baggallay, C. H. Brodie, A. O. Collard, H. O. Cresswell, F. R. Farrow, H. L. Florence, E. S. Gale, O. Fleming, J. A. Gotch, F. T. W. Goldsmith, W. J. H. Leverton, W. J. N. Millard, E. W. Mountford, T. E. Pryce, L. Stokes, H. D. Searles-Wood, W. H. Seth-Smith, and P. Waterhouse,—to consider and report upon the questions raised by the Report of the Special Committee on Education.

Although the Reorganisation Committee had not completed its labours by the close of the session, it had presented more than one *interim* report to the Committee, the first of which included the curriculum which has been adopted, and forms the basis of that printed on page 38.* The Committee wish to explain that could the changes have been introduced more gradually, such a course would have been recommended; but, after careful consideration, the establishment at once of a complete four years' course of study seemed the most practicable course to adopt.

The Reorganisation Committee having also reported upon the unsuitability of our premises in Conduit-street for the new scheme of education, and upon the impossibility of acquiring suitable accommodation in the same building, advised the Committee to secure other premises in the neighbourhood where the various classes and Studio could be properly established. Negotiations with this object in view were still proceeding at the close of the session.

The Committee, acting upon the resolution passed by the Association in 1889-90, has appointed a paid Assistant-Secretary. The Committee has also advertised for lecturers and masters for the various subjects included in the curriculum. The applications received in response were under consideration at the close of the session, and have been handed over to the new Committee.

The Committee, feeling that the support of the Royal Institute of British Architects would be of the greatest help to the Association in launching its new scheme, submitted a copy of the new curriculum to the Council of that body, who, without giving its adherence to all the details of the scheme, heartily approved the objects the Association had in view, and placed an evening at the disposal of the Association on which the new scheme of education could be laid before the members of the Institute with a view to obtaining their support. The evening named by the Council of the Institute for this purpose was June 8, which is not within the limits of the session dealt with by this report.

* Of the "Brown Book" of the Association.

Having secured several liberal promises of help, the Committee issued an appeal for funds, as it was estimated that a sum of at least 2,000*l.* would be required to properly establish the new scheme. As this appeal was only issued a few days before the close of the session, the Committee cannot report upon the result, but feel that the thanks of all members of the Association are due to those gentlemen who generously came forward to head the subscription-lists."

The remainder of the report is devoted to a detailed record of the work of the various classes, &c. The members whose names are given in the Brown Book number 1,137, and the report concludes with the statement that the financial position of the Association is fairly satisfactory. The total income for the session was 905*l.* 19s. 10d., and there was a balance in hand of 115*l.* 5s. 8½d.

Mr. Leonard Stokes seconded the motion for the adoption of the report and balance-sheet, and it was agreed to.

Mr. Pratt proposed a vote of thanks to the auditors, Messrs. Campbell Jones and E. C. Pinks, which having been seconded, was also agreed to.

Mr. E. S. Gale, senior honorary secretary, then read a long list of names of gentlemen who have subscribed to the special funds for the new educational scheme of the Association.

The Chairman said he wished to move that their heartiest thanks be given to the donors and subscribers for their kind help to them in their efforts to improve their classes and work.

The vote of thanks was passed with acclamation.

The following gentlemen were then elected members, viz.:—Messrs. R. A. Jack, W. G. Watkins, and P. J. Hanson.

The Chairman stated that in accordance with a resolution of the Committee to the effect that any one who accepted a paid office in the Architectural Association must resign his seat on the Committee, but could stand for re-election, their Vice-President and past secretary, Mr. F. R. Farrow, who had been appointed a lecturer under the new system, had resigned his office of Vice-President of the Association. In accordance with their By-laws, the announcement would be made at their next meeting of the gentleman whom the Committee would nominate to fill the vacancy.

The Chairman said he thought those present would be interested to know how many members had already entered the new classes. The classes had been started about a fortnight. In the first year forty-three students were taking the whole or part of the course; for the second year nineteen names had been found in the attendance-books, and for the third year eighteen names. For the fourth year, he was sorry to say that only four gentlemen had applied to take any lectures, and at present none of the lectures had been given in consequence of the small number of students. He understood, however, that there were others thinking of joining.

The Chairman then presented the prizes gained during the last session. The following is the list:—

A.A. Travelling Studentship.—Awarded to Mr. Kotaro Sakurai.

Prizes for Measured Drawings.—Not awarded.

The A.A. Medal.—Mr. Alfred Cox.

The Essay Prize and Medal.—First, Mr. W. Wonnacott; second, Mr. J. A. Pywell.

Cates' Prize.—Mr. H. G. Gamble.

Sketch Book.—Not awarded.

Lectures on the History of Architecture.—First, Mr. J. Murray. Second and third not awarded.

Lectures on Construction.—First, Mr. W. C. Waymouth; second, Mr. H. G. Collins; third, Mr. A. Stratton.

Elementary Class of Design: Sec. I.—First, Mr. E. A. Rickards; second, Mr. T. A. Sladdin; hon. mention, Mr. S. Leake.

Elementary Class of Design: Sec. II.—First, Mr. E. P. Cameron; second, Mr. W. A. Forsyth.

Elementary Class of Construction.—First, Mr. C. E. Salmon; second, Mr. A. Stratton.

Elementary Class of Ornament and Colour Decoration.—First, Mr. F. A. C. Smith; second, Mr. A. W. Jarvis; third, Mr. H. Jefferis.

Class of Design.—First, Mr. H. G. Lidstone; second, Mr. J. C. Stockdale; third, Mr. W. A. Lewis.

Colour Decoration Class—Time Sketch Prize.—First, Mr. J. P. Cooper; second, Mr. M. Garbutt.

Class of Construction.—First, Mr. H. E. Matthews; second, Mr. J. C. Stockdale.

Advanced Class of Construction.—First, Mr. J. Murray.

Class for the Study of Quantity Surveying, and Specification Writing.—First, Mr. J. P. Clark; second, Mr. W. B. Parry; third, not awarded.

Scholarships.—The Chairman announced that four scholarships had been awarded, of the annual value of 10*l.* 10s., and tenable for two years, to the following gentlemen:—For the First and Second Years' Courses, Mr. E. A. Rickards and Mr. A. J. Stratton; and for the Third and Fourth Years' Courses to Mr. W. C. Waymouth and Mr. C. C. Winmill.

Mr. Baggallay's Presidential Address.

The Chairman next delivered his Presidential Address. He said:—

Gentlemen and Fellow Members of the Architectural Association,—It is probable that never since the constitution of this society forty-four years ago, has the President for the time being risen to deliver his address at the opening meeting under a heavier sense of responsibility than that which I feel at this time. We stand together as an Association at the threshold of a new life; we have taken upon ourselves, as a body, grave responsibilities, fraught, in all probability, with good or ill consequences of the most serious kind, not to ourselves alone, but to the profession and ancient art of architecture. At such a time you have a right to expect from him upon whom you have conferred the highest honour at your disposal, by placing him for a time at your head, that he shall well weigh the words which it is one of his duties to utter.

At first sight the most obvious course to take at a fresh point of departure, such as the present certainly is, would be to recite the main facts of the history of the Architectural Association, and especially of the history of the past two years, during which the changes now brought about have been discussed and decided on. I am, however, afraid of wearying you by any such recital, and, moreover, it might be difficult to avoid all controversial matter such as you are probably as desirous as I am should be left alone. The main facts and considerations which, in my opinion, have been accumulating for many years, and have gradually impressed upon most of us the great necessity for a radical reform in the method of conducting our classes, were fully stated and commented on in a paper read before the Royal Institute of British Architects last July. This paper was issued to all of you as a supplement to the August number of "A. A. Notes," and I do not, therefore, think those facts and considerations need be again referred to here.

It is, however, necessary to state what changes have been made, and some of the main objects aimed at in them. This I will do as shortly and concisely as possible, premising that all that has been done is based upon the resolutions relating to the matter, which were passed by the Association in June, 1890.

The four principal objects or central ideas have been—first, to substitute a series of classes arranged on a comprehensive system, for the old classes all independent of one another, with a view to conducting students through a regular course; secondly, to substitute a single responsible teacher or lecturer in most cases for a group of voluntary instructors, with a view to making the instruction more consistent, consecutive, and effective; thirdly, to fill up gaps and make the course complete; and, fourthly, to provide a place in which students could make their drawings and designs under the superintendence of competent instructors, with the advantage of their advice while at work, instead of only hearing their criticisms when it was completed.

With these objects in view, a regular curriculum of study has been drawn up, the details of which are all fully set out in our Brown Books, and in the pamphlet which has been sent to you all, and for the editing and circulating of which we are indebted to our enthusiastic honorary secretary, Mr. E. S. Gale. To conduct the work of the various classes, lecturers and instructors have been appointed, whose names will be found in the Brown Book, and are a guarantee that their work will be well done. It is almost unnecessary to add that, in many cases, the task has been undertaken out of pure goodwill to the Association, or to the cause of architectural education. To provide the accommodation for drawing and designing, and also to provide proper class-rooms, new premises at No. 56, Great Marlborough-street, have been rented, where a library and reading-room, two class-rooms, and two studios have been fitted up. You are already aware that the increase in the secre-

tarial work of the Association, involved by these fresh arrangements, added to the already heavy burdens laid upon our honorary secretaries, has necessitated the appointment of an assistant secretary at a salary.

The fees to be paid by students have been fixed in accordance with the resolution dealing with that matter. They are, of course, large as compared with the old nominal class fees; but from all other points of view, I think they must be acknowledged to be exceedingly moderate. At the same time, it is calculated that, under the arrangements made, all expenses for instruction, and the increase in rent and other expenses involved by the change, will be paid by these fees if twenty-five fresh members take up the course each year and pass steadily through the four years, or if there is an equivalent attendance in other ways.

These arrangements, although they leave many important branches of our work untouched, a circumstance which has, I fancy, sometimes been overlooked, certainly represent something like a revolution in our system of education, which has always been, and must, I think, always remain, our chief object. The change may seem to many to have come somewhat suddenly; but those who have watched closely the position and work of the Association, and the advance of architectural education in recent years, cannot but have observed the gradual approach of the time when some such change would be absolutely necessary,—unless, indeed, we should be satisfied to sink into insignificance, or become a mere social body. Not only had our classes become too numerous, and some of them too unwieldy to be managed in the old way, but the technical training of architects had become too serious a matter to be undertaken in other than a serious spirit and systematic manner. A change of some sort has been foreshadowed, more or less, by almost every succeeding President in the annual addresses of the last seven years, and the nature of the change has, as you know, cost us during more than two years much discussion and much thought and labour. It has now been effected with the sanction of the general body of members, and, whether for good or ill, we are launched upon a course which most of us believe is destined to lead the Association into a position of influence and usefulness very far in advance of even that that it has hitherto occupied, but which, it cannot be denied, may prove at the outset one of some danger and difficulty.

It is not easy for me to indicate precisely where the danger or difficulty may appear; nor do I wish to anticipate anything of the sort; but when we think of how small a reserve of funds,—notwithstanding the generosity of our friends,—the Association has to fall back upon, it is impossible to feel that we are safe in that direction. Then, again, it would be strange if all the arrangements made for the future, made, it is true, with an immense amount of labour and anxious care, but still under some pressure of time and necessity, and without the data which experience alone will provide, were found to be faultless, or to work in every respect perfectly satisfactorily. We must, I think, expect as time passes to find that many improvements are possible, and will have to be introduced.

Again, it would be almost as strange if such changes as have been effected had been brought about entirely without injury to some individual interests. Any considerable change or reform in such an old-established society as ours, must, I imagine, almost inevitably, at the moment, produce a small crop of grievances. I hope it may not prove to be the case in the present instance—and at least we may be sure that *esprit de corps* will prevent any one making more of his grievances than he can help; but that makes it all the more incumbent on us not to shirk the difficulty, but to be prepared earnestly to endeavour to mitigate any hardship inflicted upon individuals, if we can do so without injury to the interests of the Association as a body.

It will usually fall to the lot of the Committee that you elected last May to deal in the first instance with any difficulties which may arise. That Committee has laboured almost incessantly for the last four months, and will so continue to labour, in the interests of the Association, and for the promotion of its objects. It is unusually representative of a large number of interests and shades of opinion in the Society, and I am sure that it has the confidence of the general body of members, and will receive their support in the future as in the past.

To return to our new curriculum. The fact that the course extends over four years has been much criticised, some being of opinion that it is too long a period, and some that it is too short; but, I think, if you consider that among those who use our classes are not only pupils in all stages of their articles, but also assistants, and others of some years' experience in the profession, that it would be neither just nor expedient if we omitted to provide, as far as possible, for the wants of all of these; when, too, you remember that those who intend to become members of the Institute must in future, according to the regulations, allow four years to elapse between their preliminary and final examinations; then, I think, you will come to the conclusion that there are sufficient grounds for the arrangement that has been made.

We cannot, of course, expect that all who take up the course in the first or any year will go through all the subsequent years,—loss of enthusiasm, pure idleness, and circumstances of various kinds, will cause many to fall out, and the gaps cannot all be filled by those who come up from the country or from abroad to finish their professional education, or by the occasional students who prefer to pick out only certain classes. We must, therefore, be prepared always to find a rather larger number of students working in the earlier years than in the later ones, just as hitherto our elementary classes have always been the better attended. If, however, the classes are properly and efficiently conducted, as it must be our business to see that they are, we may fairly expect that a considerable number, probably a large majority, of future members will see the advantage of working steadily through the four years' course, for, even if the opportunity of gaining an insight into all the subjects taken up were not sufficient inducement, the spur of the Institute examinations might be trusted to keep many at work.

It is still impossible to judge of the extent to which the new classes will be popular, but the number of students who have taken up the course, or parts of it, already is quite as large as, if not larger than, one could reasonably have expected to begin with, and the number increases every day. One very promising circumstance is that by far the largest number have entered as "first year" students. If most of these gentlemen work steadily through the four years' course, and if about the same number enter each October, there can be no doubt whatever that in the estimated three years' time, or even sooner, the full number expected will be reached. Judging by the attendances up to the present time, the studio, contrary to the expectation of many, appears to be a very popular part of the new arrangements.

Another most encouraging circumstance, and one deserving to be especially mentioned, is that, in a considerable number of cases, the fees appear to be paid by the principals for their pupils. In this connexion it is worth while to mention that a fuller comprehension of our intentions and arrangements seems to have led to an approval of them which is not only much more general among architects than at one time seemed likely, but which appears to be now very nearly universal; several of those who at first certainly viewed the proposed changes with suspicion, if not with dislike, have now expressed an approval, more or less cordial, and one or two have subscribed to our funds, or promised help in other ways.

Perhaps the greatest encouragement we have received is from the fact that the Royal Institute of British Architects so far thinks well of what we are doing, that it has in the most friendly spirit passed a resolution pledging itself to afford us pecuniary assistance, and instructing its Council to consider and decide as speedily as possible in what manner and to what extent such assistance shall be given. I do not know at present what decision will be arrived at, but we have every reason to believe that the donation or subscription will be a generous one.

The premises, which after much trouble and delay we have been so fortunate as to secure, though a little small, are in all other respects admirably suited to our purposes. We only obtained possession about a fortnight before the opening of the session, and, notwithstanding every effort on our part, they were still far from ready when first used; they are now, however, in fairly good order. It will still, naturally, take a little time before we completely settle down into them; but when we have done so, I believe they will prove to be very convenient and well adapted to the uses to which we are putting them.

Funds are still much needed to meet the heavy initial expenses, and the deficit on account of the classes which there must be this year, and which there will probably be for one or two years to come. Notwithstanding the generous donations we have received, the 2,000*l.* we asked for has not yet been half subscribed, and I do not think we can rest content without the full amount. A much larger sum which could be treated as capital or as reserve is indeed needed before the Association can consider itself in a perfectly secure and satisfactory financial position.

But pressing as the financial question is, it is not so pressing that it should exclude from our minds the grave responsibility we have assumed towards those who will entrust their technical training to us, and, indeed, towards the whole of the architectural profession. I put the matter thus, because, although we have from the first held classes, and have for some years given lectures, and done a good deal of serious teaching, we have never before professed to do the greater part of it in other than a semi-amateur way, and have never pretended that the Association course was anything like a full or sufficient complement to the practical training of office work.

We may say that we make no such pretension now, and shall be right in so far that private study, especially in certain directions, which I propose presently to indicate, will be as necessary as ever; but as regards such technical training as lectures and classes can give, I am afraid students and the profession will now have a right to expect our course to be complete and efficient.

I think we cannot justly refuse to accept this responsibility, or to strive earnestly to fulfil the duties of the position we have assumed, by making our teaching as complete and as efficient as the most strenuous efforts and most watchful care on our part can make it. Among the duties which it is possible for a professional society to charge itself with, I can imagine none more useful or more honourable than this training of its younger members for the practice of their art, and if we are true and faithful in discharging this duty, we shall deserve the gratitude and should have the support of the whole of the architectural profession in this country.

Architectural education has been the subject of much that has been said and written in recent years, and considering the many-sided character of an architect's work, and that it is quite impossible for any mere man to have all the skill and knowledge which a theoretically perfect architect would have, it is not very surprising that there are almost as many opinions as there are writers and speakers. Some hold that pupilage is all-sufficient; some that it ought to be done away with; some put their faith in sketching and measuring up what our forefathers built; others say that a modern workshop is the proper school for us; some would have the German school system; others the French atelier system; and there are plausible, indeed very good and sound arguments which can be, and have been, urged in favour of each of these theories in turn. Yet, anxious as we all are for the improvement of architectural education, I do not think these theories need trouble our minds very much, or cause us to hesitate in what we are doing, even if it does not fall in exactly with any of them. The fact that apprenticeship has an immensely strong hold upon the profession, and that, notwithstanding its many abuses, it is, on the whole, a good system, with many advantages, makes all talk of superseding it useless for the present, even if it were possible to prove that what we should substitute would be less open to objection. At the same time, all that we have been doing for the last forty years, and all that others have doing recently, proves beyond a doubt that apprenticeship is not, as regards architecture, so all-sufficing in the latter half of the nineteenth century as it once was, and that there is a real and urgent call for something in addition. On this ground the Association has always taken its stand, and does so still; we aim no blow at pupilage, but we desire to provide means whereby the necessary knowledge and training, not to be obtained in the course of office work, may be accessible to those who join us.

Among these means, classes and lectures, and

our newly-instituted drawing and designing school or studio, are not the only ones, although they are, perhaps, the most important. It must not be forgotten that we have a library which is, I believe, the largest and the most nearly complete architectural lending library in the kingdom. Our books are also accessible to members for reference when not out on loan, and a recent munificent donation will enable us to largely increase the number available for this purpose. I cannot too strongly urge upon you all to make all possible use of these books, —whether it is that the use of the pencil has such superior attractions, or whether it is an exaggerated notion of the comparative uselessness of mere "book-learning," I know not, but too many students of architecture, I am afraid, read but little, and that little only when it is needed to enable them to pass some examination. This is a great mistake; even if there were nothing to be learnt from books which might not be better learnt in some other way,—which is far from being the case,—still, reading exercises the brain and stimulates thought and imagination in connexion with a subject. Even desultory reading is of use in this way; but the systematic study of the literature of a particular subject is obviously infinitely better.

Another of the most useful of our institutions is our system of visiting works in progress. These are usually among the most important buildings being erected in London at the time, and the opportunity of seeing for yourselves how they are being put together, and what their architects consider to be the best ways of doing certain things, the best methods of construction, and the best means of heating, ventilating, lighting, draining, and so on, is an advantage which can hardly be estimated too highly. Our visits to old buildings, especially when they are buildings not otherwise readily accessible, are no less useful, and are even more attractive. The annual excursion of a party to some district of architectural interest in England or abroad is as enjoyable as it is improving to those who take part in it, and I am surprised that the number of excursionists does not increase; the expense is really very small, and would be less if more joined; but notwithstanding the immense increase in the muster-roll of the Association, this number remains always about the same as it has been for many years past. It may encourage some of you to know that several comparatively younger members came with us this year, and I am bound to say that among them were some of the best sketchers, and that, as far as I could see, they enjoyed themselves, and did as much work as the old hands. Whether or no the proposal to organise a junior excursion, which fell through last year, will be revived, I cannot tell; I believe that by some it is not thought desirable; but, for my own part, I fancy good might certainly result if some of the junior members could agree to spend a few days together in studying some work of interest at a distance from London, provided, of course, that the scheme were properly thought out and carefully organised.

Another circumstance which has often surprised me is that the Sketch-book published by the Association does not share, as it should, in the general progress by attracting a larger number of subscribers; the value of the plates as records of old work, owing to their size, and to the large number of drawings and sketches from which the subjects are selected, and owing to the care exercised in their selection and reproduction, is out of all proportion to the cost, and would seem to deserve more recognition. Recently, Mr. Lewis, one of the editors, has expended a great amount of time and labour in collecting and attaching to the plates a variety of authentic information, especially dates, which should further recommend the publication to you.

One of the humbler, but not the least useful, of our institutions is our register of assistants who want work. It is an institution through which, I believe, many principals and assistants have been brought together to their mutual benefit and satisfaction.

Above and beyond all other means by which we strive to carry out our objects, our fortnightly ordinary meetings are the most ancient, and still one of the most important. I could wish to see these meetings better attended than they have been sometimes lately. I should like to hear the discussions more lively, and the chat in the room after the meeting more general. The papers which we are promised this year ought, from their titles and the names of their authors, to be at least as interesting and instructive as any we have ever had before, and I venture to express a very strong hope that both senior and junior members will make an effort to come as often as they can, and to contribute as often as they can to the discussions, by giving us their opinions, or by relating what they know on the subject, or by suggesting points on which the lecturer might give fuller information. I remember that in past times a good many questions used to be asked of the lecturer by the younger members, and I hope the custom will be revived; it is an easy way in which to join in the discussion, and may often be exceedingly useful in eliciting information. I hope, too, to see the old custom revived of exhibiting some of the class-work,—it will now be the studio-work,—in the room on these occasions. I think, with a very small effort on the part of individuals, our ordinary meetings might be made the means of drawing us all more closely together,—we should at least get to know each other's faces better,—and really good discussions on the subjects of the papers could not but be of the utmost benefit to all.*

ARCHITECTURAL SOCIETIES.

Birmingham Architectural Association.—The new session of this Association opened on Tuesday evening last, when a good number of members attended to hear the address delivered by Mr. W. Hale, F.R.I.B.A., the newly-elected President. The business of the meeting was opened by a hearty vote of thanks being unanimously accorded to Mr. T. Naden, the retiring President, for his able and untiring services to the Association during the three years in which he had held that office. Mr. Hale then delivered his Presidential address, in which he asked the members to consider that there was but one true meaning of the term architecture, and that architecture was an art resting on a scientific, basis and not a mere business; and pointed out that a building might be well or ill-planned and soundly constructed and yet be devoid of architecture, but that it was essentially a part of good architecture that the building should be well-planned and built. Mr. Hale then urged that good architecture could not be obtained by mere antiquarianism; that the study of old work should be made with the view of adapting the principles which produced good results to the needs of modern times, and this could not be done by mere following of precedent; and that good results could only be obtained by basing the artistic elements of the architecture on the scientific laws which should govern the planning and construction of modern buildings. In looking to the future Mr. Hale thought that there was much reason to hope for better things, for though architecture could not be considered level with the times, the work of to-day is greatly better than that of thirty years ago, and the junior members of the profession were enthusiastic and had greater opportunities than their predecessors; though, on the other hand, he felt that the general public understood nothing of architecture, and he would like to see some education given in schools in the elements of architecture. Mr. Hale also spoke in favour of a suggestion which had been made that an "artist architect" should be appointed by city authorities to approve the designs on new buildings. The usual vote of thanks, followed by some discussion, brought the meeting to a close.

Glasgow Institute of Architects.—The annual meeting of the Glasgow Institute of Architects was held in the Religious Institution Rooms, Glasgow, on the 20th inst., Mr. William Leiper in the chair. The Council submitted the twenty-third annual report, which showed that the number of ordinary members on the roll presently stood at 49, and there were 8 honorary members, making 57 in all. The Chairman, in moving the adoption of the report, said he was sure there were members of the profession still outside who might be induced to join the Association. He regretted that the proposal that the Institute should have a home of its own had not found favour with the majority, but they did not despair of it being accomplished yet. The Institute did not support the application of the Society of Architects for registration, as they considered that the Royal Institute already fulfilled all that was needful. Touching on the education of young architects, he remarked that a distinct advance had been made in this respect, and of four local candidates who went up for examination recently three had passed. After referring to the Building Act, to assist which the Institute prepared a draft bill and forwarded it to the Clerk of Police, the Chairman spoke of the important architectural project in which they were interested locally,—namely, the new Fine-Art Gallery, Museum, and Music Hall. A school of design under the same roof would be an immense advantage, as the objects of art sent from South Kensington and elsewhere could be conveniently studied, Referring to the growing use of red stone and terra-cotta in street buildings, he said this was rather remarkable in a city where formerly only what was originally white stone was tolerated. No doubt the reason was that hardly any of our white stones would stand an atmosphere laden with acids and smoke, while it was found that, as a rule, the red stone resisted more effectually the deleterious effects of the town atmosphere, and that white stone after a time became a dismal black. He thought that some better method of preserving these white stones should be resorted to than painting them. In Paris, hot jets of steam were used once a year to clean out the soot and dirt which gathered on the fronts. That there was no committee of taste in Glasgow was due to the fact that beauty must give way to utility, which with its iron plough overturned the fine flower of architecture, and destroyed vistas and fine parks and gardens. The report was adopted.

Manchester Society of Architects.—The awards of prizes in the Students' Competitions have just been made by the Council of this Society. The Society's first prize of 10*l.* goes to Mr. Roger Oldham, and the second prize of 5*l.* to Mr. A. Jamison. Mr. H. E. Sterry has gained Mr. Holden's prize of five guineas.

ARCHÆOLOGICAL SOCIETIES.

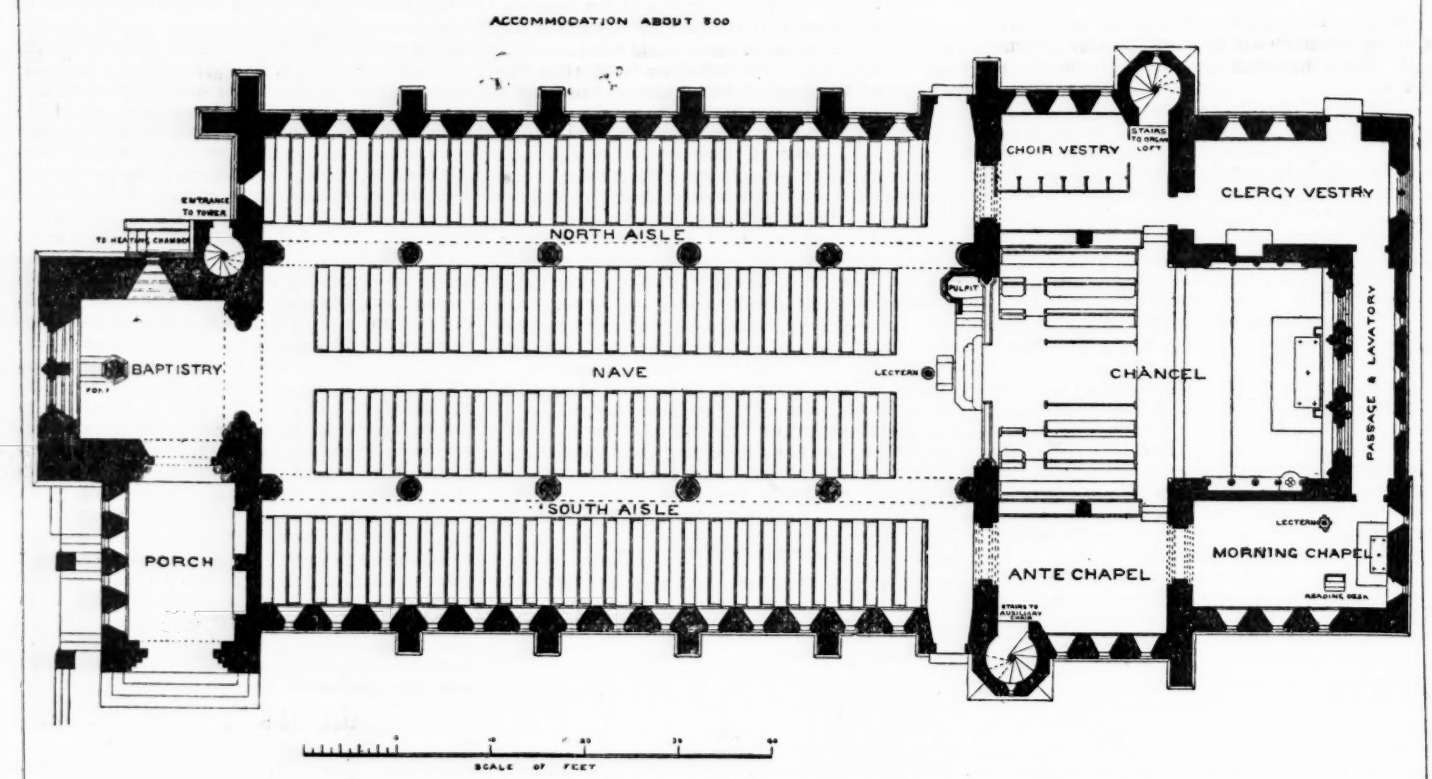
Bradford Historical and Antiquarian Society.—The annual meeting of this Society was held at the Alexandra Hotel, Bradford, on Tuesday evening, Mr. T. T. Empsall, the President, being in the chair. The annual report was read by Mr. J. A. Clapham, the Hon. Corresponding Secretary, and was of a very encouraging nature. Two hundred and forty-five members are on the books, and a balance of over £95 is in the bank. The winter evening meetings have been better attended, and the excursions, especially those to Harewood and York, have been the largest on record. Thanks were given to the Council for their services, and to the ladies and gentlemen who had kindly permitted the antiquarians to see their interesting churches, castles, and mansions, and also to those who had given papers and acted as *ciceroni*. Besides the list of papers for the winter evenings, excursions for the summer were announced to Reevy Hall and Beacon, Sawley Abbey, Gisburn Church and Bolton Hall; Wakefield Cathedral, Chapel-on-the-Bridge and Manor Court; Spofforth Castle and Church; Whalley Abbey, Mylton Church, Stoneyhurst College, and Clitheroe Castle; and Wordchurch and Dewsbury churches. The Society publishes a small journal called the *Bradford Antiquary*.

COMPETITIONS.

Lecture Hall, &c., Widnes.—In a recent limited competition the plans of Mr. Thomas W. Cubbon, architect, Birkenhead, were adopted for a new lecture hall and Sunday-school buildings in connexion with Milton Congregational Church, Widnes, accommodation being provided for 550 persons.

The Electrical Exhibition of 1892. — It is announced that this Exhibition, to be opened at the Crystal Palace on January 1 next, and which will form a complete record of ten years' progress, is now a matter of certainty. The exhibits will include electric lighting plants for country and town houses, for mines, for steamships, for railway trains, and even for private carriages. There are also included the newest forms of motors, generators, accumulators, and other machinery employed for producing and storing electricity. The Apparatus Section will include a complete set of Sir William Thomson's Standard Electric Instruments, new electro-medical and electro-thermic apparatus; the latest improvements in telephony and telegraphy, and also the most recent electrical appliances for war purposes, blasting, signalling, &c.

* The remainder of the address, together with a report of the discussion which followed, will be given in our next.



St. Peter's, Pentre, Glamorganshire.—Plan.

Illustrations.

BROOKLANDS, WEYBRIDGE.

THIS is an old house, with new roof, windows, facings, &c. The house was built about thirty years ago by estate-workmen, with no architect, and in consequence the roof, which was of very shallow pitch and slated, began to fall in and thrust the walls out. The old roof was removed, and an entire new attic story and roof constructed. All the old windows were taken out, and new windows with sash-bars inserted; the string-courses of rough toothed brickwork, and dressings all in black mortar, were cut out and replaced by new gauged brick dressings, arches, and bands, and the whole of the building repointed. The top story of the tower was taken down, and a new gabled roof and observatory built. Besides the above work a new staircase and various additions to the billiard-room were made. The works were carried out by Mr. J. A. Hunt, of Hoddesdon, from the designs of Mr. Reginald Blomfield, architect.

The drawing from which the lithograph is taken was exhibited at this year's Royal Academy.

FAÇADE OF THE NATIONAL GALLERY.

WE publish this week Professor Aitchison's drawing which was exhibited at the Royal Academy this year, showing his idea as to how Wilkins might and possibly would have carried out his façade, had he been free to treat the plan or projection of the front as he pleased, and in what may be called the normal manner in such a case, by bringing forward and emphasising the ends instead of setting them back. There is no doubt that the alteration suggested by Professor Aitchison would be a great improvement to the façade, and might be worth carrying out now, though we confess we cannot quite share his admiration for the centre portion of Wilkins's work. In regard to the drawing Professor Aitchison writes as follows:—

"As you are good enough to publish my drawing of Wilkins's supposed original design for the National Gallery, I think I should say something about it.

In spite of the difficulties Wilkins had to contend with, I consider that part of the front which embraces the central portico and the two side entrances one of the finest buildings in London.

There were two questions to be solved before I attempted it. First, was there a drawing or sketch of his original design? for it is to be presumed he made one before he had to set back the ends to preserve the view of St. Martin's Church. Secondly, if no drawings could be found, the problem to be solved was this, what would he have done with the front had he been free to carry out his own views? Although I was, by the kindness of the authorities, allowed to see all the drawings in the possession of the Board of Works, there was no drawing or sketch of his original design to be found, and his models of the National Gallery in the possession of the Royal Academy only consist of the front portico and the side entrance. I was, therefore, thrown back on conjecture, and I came to the conclusion that he would have enforced the ends and put domes over them. I have, consequently, done so, and I have ventured to put a larger cornice to the central dome, and to make the windows of the drum square-headed.

If this alteration were made some additional wall space would be got for pictures, and the ground would cost nothing.

G. AITCHISON."

ST. PETER'S CHURCH, PENTRE, GLAMORGANSHIRE.

THIS church was commenced in 1888, at the expense of the late Mr. Llewellyn, of Raglan Hall, Glamorganshire, who did not live, however, to see the completion of the work.

The architecture is of thirteenth century character throughout. Free use has been made of constructional colour in a variety of different kinds of stone, brickwork, alabaster, marbles, mosaic, tiles, and painted glass. The composition of the east end occupies the whole of the space from the floor to the roof. The first 15 ft. is taken up by the reredos, which is constructed in alabaster, combined with marbles, mosaic, and sculpture. On either side of the altar are wall arches, elaborately moulded and carved; above these are figures in niches of the four great prophets and the four evangelists. The centre compartments are occupied with sculptured panels in relief, the subjects being "The Nativity," "The Crucifixion," and "The Resurrection." The buttresses of the centre compartment are surmounted by angels in devotional attitudes. Above the reredos is a great triplet, which occupies the whole width of the chancel, the lights being filled with rich painted glass representing "The Ascension." The completion of this subject is in mosaic (not yet fixed), which extends over the arches of the triplet up to the line of the roof. The floors of the chancel are in tiles and marble of rich colour, and the chancel fittings are in oak. The pulpit is in stone of different colours, the sculptured panels in which illustrate some of the incidents in the life of the patron saint, viz., "The Charge to St. Peter," "The Raising of Dorcas," "St. Peter Walking on the Sea," and "The Delivery of St. Peter from Prison." The font is composed of a variety of richly coloured marbles. The morning chapel has a reredos in mosaic, with three lights over it, of which the upper one is filled with painted glass, representing our Saviour as "The Redeemer," and the lower ones figures of St. Peter and St. John.

The contractor is Mr. T. Collins of Tewkesbury, and the architects are Messrs. Kempson & Fowler, of Llandaff. The church seats 800, and the cost has been about 20,000*l*.

MANCHESTER NEW COLLEGE, OXFORD.

THE two illustrations represent a general view of the College from the library angle on the Mansfield-road leading from Holywell to the Parks, and an enlarged view of the chapel and entrance gateway taken from the Holywell end.

Manchester New College is an institution which has been in existence for more than a hundred years for the purpose of teaching theology without insisting on the adoption of particular theological doctrines, and was originally founded at Manchester in 1786. Having since that time been located at Warrington, York, and London, the College has lately been moved from University Hall, Gordon-square, to Oxford, where a site has been purchased close to Mansfield College.

The foundations were put in during last year by Messrs. Parnell & Son, of Rugby, whose tender for the superstructure has just been accepted by the trustees, and amounts to 22,409*l*., which includes ashlar work of Darley Dale (Derbyshire) stone, adopted by the trustees upon the advice of the architects in consequence of the general decomposition of stone in Oxford.

The library, which forms the north side of the quadrangle upon the first floor, will be a large room 80 ft. by 32 ft., with a handsome open oak roof and fittings, below which, on the ground floor, are lecture-rooms and a students' common-room. The front of the building east of the quadrangle is occupied by Professors, and on the south side is the chapel. The fourth side of the quadrangle is completed by a porter's house, kitchens, &c. The college is non-residential, and is intended for tuition only; but in other respects it will be a self-contained and complete institution.

Messrs. Worthington & Elgood, of Manchester, are the architects to the Trustees.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday afternoon last, the Chairman, Sir John Lubbock, presiding.

The Proposed Municipal Lodging-House.—Tenders were opened for the proposed Municipal Lodging-house in Parker-street, Drury-lane. The list will be found under the heading "Tenders," in another column.* We may here state that, at a later stage of the meeting of the Council, the Housing of the Working Classes Committee reported that, in accordance with authority given to them by the Council, they had engaged Mr. Kellond (who had been recommended by Messrs. Gibson & Russell, and whose qualifications were considered satisfactory by the Council's Architect) to act as clerk of works in connexion with the erection of the lodging-house.

The Chairmanship.—Sir John Lubbock said that since the last meeting of the Council he had received a memorial, signed, he understood, by all his colleagues now in England, requesting him to continue to occupy the chair until the Council's extended term of office expired in March next. He looked upon this not only as an honour, but as a command; and he should not feel it necessary to put the Council to the trouble of formal re-election. He should like to add that in alluding to private reasons as having in part determined him to tender his resignation, he did not refer to any difficulties or misunderstandings in the Council, but only to a natural desire for some more rest and leisure. The post was an arduous one,—indeed, he thought they had all compressed six years' work into the last three years. Differences of opinion, no doubt, there had been, but no friction; and he had to thank his colleagues, one and all, for their constant support of the Chair in public, and in their private relations also for their unvarying kindness and cordiality. In concluding, he appealed to the Vice-Chairman and Deputy-Chairman to withdraw their resignations for the same reason.

Sir Thomas Farrer and Mr. Haggis intimated compliance with the request, amid applause.

Pension for Captain Shaw.—On this subject the General Purposes Committee reported as follows:—

"We have received from the Fire Brigade Committee a recommendation that Captain Shaw, on his retirement from the command of the Fire Brigade, should, in consideration of his long and efficient service of thirty years, receive the maximum pension of two-thirds of his pay and allowances. Captain Shaw's salary is 1,200*l.* a year, and the value of his emoluments has already been fixed at 250*l.* a year, making a total of 1,450*l.* We entirely agree with the Fire Brigade Committee as to the efficiency and value of Captain Shaw's services and his title to the highest pension which can be granted, and we recommend—

'That Captain Shaw, on retiring from the service of the Council, do receive a pension of 966*l.* 13s. 4d. a year.'"

This was agreed to, after some discussion, with but three dissentients.

The Recent Rejection of Improvement Schemes. — The Improvements Committee brought up a report of which the first paragraph was as follows:—

"On October 6, the Council rejected (with one exception) all the improvements recommended in our report of September 23, and passed the following resolution:—

'That having regard to the present and exceptional position in which lessees and occupiers in the metropolis, who are under contracts entered into in and since 1853 for the payment of rates, will be placed by a charge or rate upon them for the next sixty years for repayment of capital sums raised for street improvements, and which capital sums were never intended to be covered by such covenants, this Council is of opinion that it is inequitable to increase the burden on such lessees by undertaking the proposed new street improvements.'

This we interpret as an instruction to us to refrain from taking into consideration any further new improvements."

This gave rise to a long discussion, some of those members who had been most active in supporting the resolution of October 6 objecting to the Improvement Committee's interpretation of the resolution, and especially to the Committee recording their interpretation. But, it was asked by those who supported the motion for the reception of the report, if the resolution was not to be so interpreted, what was its meaning? In reply, the objectors said that the majority of the Council were better interpreters of their intentions than any Committee could be. Asked what those intentions were, if they had not been correctly interpreted by the Committee, no coherent reply was forthcoming. It was urged that the Improvements Committee, to be logical, should resign *en masse*, seeing that, acting on the instructions of the Council, they had given a great deal of time to the consideration of these improvement schemes. The Committee, it was urged, had great reason to complain, for after all the time they had devoted to the consideration of the improvement schemes recently brought forward, not one of those improvements had been discussed on its merits. Mr. Westacott urged that by the removal of the gates and bars in St. Pancras the necessity for the proposed new street from Holborn to the Strand would soon make itself very disagreeably and painfully felt, and he referred to the ineffable folly of the action of the majority of the Council in refusing to take steps for the construction of approaches to the new Tower Bridge. The effect of that action would be that when, by the public spirit of the Corporation, the new bridge was completed, there would be no adequate approaches to it. Could folly go further? An amendment to the effect that the Report be received, with the exception of the paragraph in question, was rejected by 52 votes against to 37 votes for, and the motion for the reception of the Report was agreed to.

Electric Lighting for the Council's Offices.—On this subject, the Offices Committee reported as follows:—

"The Council has from time to time given authority for the installation of the electric light in some of the rooms of the main building. We have now to report that we have had under consideration the desirability of extending the light throughout the whole of the offices. We have had a report from the Council's Medical Officer of Health on the injurious effects of gas, and the advantage that would be derived by the adoption of the electric light. He states that the amount of air required to dilute the carbonic acid resulting from an ordinary gas burner is more than double the amount of air required to dilute the carbonic acid given off by a human adult. The necessary cubic space required for purposes of health in any room is therefore vastly greater when gas is used. In the opinion of the Medical Officer, the use of the electric light is attended with no disadvantage connected with health. The Medical Officer of the Post Office, in writing to him on the results attending the use of the electric light in that department, gives a very favourable opinion. He states that 'the fact that a much better light is given without the evils attendant on the use of coal-gas, namely, the abstraction of oxygen, the production of the results of its combustion, and also, no mean consideration, the generation of great heat, must commend its use to everyone.' He further states 'that the officials in the Post Office have expressed themselves to be feeling much better in health, and better able to perform their duties since the adoption of the electric light.' The Council's Medical Officer also informs us that Mr. Brudenell Carter has had exceptional opportunity for studying the effect of electric lighting on the eyes, through having under his observation all cases of impairment or defect of sight among the persons employed in the offices of a large London industrial establishment. After several years' experience of the electric light in this establishment Mr. Carter states that no prejudicial results have attended its use. The Chief Engineer estimates the cost of the work at 1,500*l.*, and in his report adds that, as there is nothing in the light to blacken ceilings and walls, the adoption of the electric light would probably lead to a saving in the present somewhat heavy expenditure for annual cleaning. There is also far less danger from fire if the work is well done and properly looked after. The offices, as the Council is aware, are crowded, and in view of the Medical Officer's report, we are of opinion that the evil effects likely to be caused to health by this crowding might in a measure be remedied by the adoption of the electric light. We accordingly recommend—

'That, subject to an estimate being submitted to the Council by the Finance Committee as required by the statute, the electric light be extended throughout the main building of the offices of the Council; and that we be authorised to obtain tenders for the work.'"

Mr. Thornton moved as an amendment—

"That the consideration of the recommendation be deferred for six months.'

This amendment only found six supporters, and was therefore lost, and the recommendation of the Committee agreed to.

Subways. — The Parliamentary Committee reported as follows on this subject:—

"We are proceeding on the resolution passed by the Council on June 9 last, referring it to us to prepare a Bill giving the Council power to require that where there are subways in any thoroughfare, gas, water, and other companies shall lay their pipes, wires, &c., in such subways, and shall pay to the Council a rent in respect of the user of the subways; such rent to be agreed upon, or, in case of difference, settled by arbitration of the Board of Trade. The Council will no doubt recollect the proceedings on the Bill dealing with subways introduced in 1890, and the essential difficulties of the subject. As the proposed Bill will affect all the gas, water, electric lighting, telephone, and other like companies, it will no doubt meet with opposition, and, being a special subject, should, the Parliamentary Agent considers, be dealt with by a separate Bill. We concur in this view, and have accordingly instructed the Agent to proceed with the preparation of such a Bill."

The Report was received.

Appeals Relating to Removal of Subsoil.—The Building Act Committee reported as follows:—

"Section 6 of the Metropolis Management Amendment Act, 1890, provides that sand, gravel, or subsoil shall not be removed from any land upon which a new street has either been, or is intended to be, laid out, except upon such conditions as the Vestry or District Board may impose. If the Vestry or District Board shall refuse approval or impose conditions, any person dissatisfied with such refusal or such conditions may appeal to the Council, and such appeal is to stand referred to such Committee as the Council may appoint, and the determination of the Committee is to be final. We are of opinion that the most convenient course would be for the Council to constitute us as the Committee for this purpose; and we accordingly recommend—

'That the Building Act Committee be appointed the Committee for hearing and determining appeals against any order made by Vestries or District Boards under the provisions of the 6th section of the Metropolis Management Amendment Act, 1890, as to the conditions under which the subsoil of any new street may be excavated or removed.'"

This was agreed to without discussion, and after transacting other business, the Council adjourned.

* The proposed building, of which Messrs. Gibson & Russell are the architects (they having obtained the work in competition), was described, and illustrated by plans, sections, and elevations, in the *Builder* for June 20 last.

Books.

The Antiquities and Curiosities of the Exchequer. By HUBERT HALL, F.S.A. London: Elliot Stock, 1891.

WHEN Henry Beauclerc heard that his brother had been killed in New Forest he forthwith made all speed for the Norman capital of England. Why he hastened to Winchester, before pressing forward to be crowned in West Minster, will be readily gathered from the opening pages of Mr. Hubert Hall's book. Henry knew how great an advantage he would gain over his elder brother, Robert, in making himself master of the State treasure, records, and seal. By "treasure" we should understand the store of coin, plate, regalia and jewels; as distinct from the king's own "hoard," which he used to place in his bed-chamber, and which is now represented by the sovereign's "Privy Purse." The former "was located at some official centre, as at Westminster or Winchester." Mr. Hall appositely reminds us that the business of its receipts and payments, from a very early time termed the Exchequer, is at this date conducted in Treasury Chambers and the Bank of England. We know that the King's Treasury was settled in Winchester at various periods down to the end of the year 1187. A tabular statement given in the volume under review shows clearly how a custom prevailed of removing it, together with the records, tallies, regalia, hawks, &c., to various parts of the country, and, on occasion, to beyond seas, just as motives of security or convenience dictated.

The Tower, or King's Jewel House, and the Chapel of the Pyx, at Westminster, still bear testimony, if only by their names, to the ancient practice of keeping the treasure in close proximity to the royal residence. The former building, purchased by Edward III., in 1377, when Littlington was Abbot (and by some attributed to the latter), afterwards became a depository for Acts of Parliament. The Acts were removed thence into Victoria Tower in 1864; and the Jewel House has since been taken for the Standards Department of the Board of Trade. The latter and more ancient structure consists of two out of the seven bays of the undercroft of the monks' dormitory,—the Westminster boys' "big school." Its altar-

stone,—by the eastern window, if we remember rightly,—was long regarded as being the tomb of a very early Chancellor of the Exchequer, Hugolin, Chamberlain to the Confessor. In his notice of Osbert's legends, *temp.* Henry II., about the Thief in the Treasury, and the appearance of a devil seated upon a cask full of money, which so alarmed Eadward that he remitted the Danegeld tax, we do not find that Mr. Hall mentions the fact that those two episodes are depicted amongst the fourteen sculptures on the fifteenth-century screen standing along the western side of St. Eadward's Chapel in the Abbey. In 1302-3 occurred the notable robbery from a treasure, valued at 100,000*l.*, which the king, on leaving London for Scotland, had left in charge of the monks at Westminster. Richard de Podelicote, in his confession of the crime, describes how he found a way through the Chapter-house into the Refectory, and, a few months later, into the "King's Treasury." Mr. Hall gives his reasons for holding that the scene of the second attack was the Chapel of the Pyx, and not, as some writers aver, the Treasury of Receipt, or Exchequer, which formerly stood against the eastern side of William Rufus's big hall. When we last visited the Pyx Chapel we saw there a large number of tally sticks, some in chests, and all more or less decayed. Of the use of these sticks for purposes of account, as well as of the mode of reckoning with counters or dummy coins upon the Exchequer-table, Mr. Hall gives a highly interesting description, illustrated with diagrams and problems. The computation adopted seems to have been somewhat intricate, but the marking upon tally-sticks of the adjustment of any particular transaction struck the balance in a ready and certain way. This useful contribution to our knowledge of past methods employed by the Exchequer for the collection and disbursement of moneys mainly deals with matters that fall without our own especial province. But the subject appeals to most Englishmen, as concerned in the taxation of this country and the appropriation of the revenue. It forms, in our opinion, a very successful opening volume for the Camden Library Series upon the archæological history of England, under the editorship of Messrs. G. L. Gomme and T. F. Ordish, FF.S.A., to which we recently adverted.* Amongst its illustrations, which are by Mr. Ralph Nevill, F.S.A., is a drawing of the Domesday chest, now preserved in the Record Office, which is believed to be that which used to contain Domesday Survey and portion of the regalia. The skippet is shown, and described, as a turned box; in some parts of England, to our own knowledge in Huntingdonshire, a "skip" is a small basket with a lid attached. One of the symbols on some Exchequer chests or other record-holders at the Rolls, used in the fourteenth and fifteenth centuries, is a view, reputedly of Westminster Abbey (p. 58), showing a west front with a cross at each angle, and a spire rising from between two pinnacles. We may here add that the standard platinum pound and bronze yard, about whose deposit and discovery the *Times* printed some inaccurate statements on July 22 last, were immured, after successive removals, in a recess on the second landing of the public staircase leading up to the Commons' Committee-room, in 1871.

Electricity: The Science of the Nineteenth Century. A Sketch for General Readers. By E. M. Caillard. London: John Murray. 1891.

The "General Reader" to whom Mrs. Caillard mainly addresses herself in the volume before us has good cause to congratulate himself. Instead of being treated, as has usually been his fate, to a repetition of exploded theories, he will find a clear account of the present state of electrical science, written in an easy, popular style, almost entirely free from technicalities, and so well brought up to date that it includes Dr. Oliver Lodge's experiments on the Leyden jar and a sketch of Hertz's still more recent investigations on electric radiation.

It is inevitable that in a treatise written from this point of view, containing no formulæ and scarcely a mathematical symbol of any kind, there should be occasional vagueness of expression. Ever since Professor Tyndall hit upon the unfortunate title, "Heat considered as a Mode of Motion," all *popular* text-books have followed his lead, so that we are not surprised to find (page 292) "it [radiant heat] does not appear as heat at all, but as motion; and the same is true of light, and of 'radiant' electricity. There is no light, as we understand light, except where the presence of gross matter modifies the action of the ether; the interplanetary and interstellar spaces are dark. . . . But there is motion; and this motion is capable . . . . of appearing either as light or heat, or electrical energy." Mrs. Caillard can hardly mean that a person placed in interplanetary space could not see the stars, though her words seem open to that interpretation. We quote the passage rather as an illustration of the popular use of the word *motion*, than with any hope of arriving at its meaning.

Though occasionally involved, Mrs. Caillard's meaning is generally clear enough, and we have noticed few instances in which she is absolutely wrong, as she is when she states that the source of the power transmitted by the wire of the electric bell is the human hand; sometimes, too, she manages to give a wrong impression when making a statement literally true,—thus, "The centimètre is 0·3937 (considerably less than two-thirds) of an inch." Nine readers out of ten would, if in need of the explanatory parenthesis, understand by it something more than half an inch.

The best chapters in the book are, perhaps, those on atmospheric electricity; the authoress has collected a number of curious and interesting anecdotes respecting thunderstorms; the matter is well arranged, and the most modern views on lightning-conductors are clearly set forth. We retain, however, an attitude of respectful incredulity when we are told that we see lightning "one hundred thousand times less bright than it really is." Nor can we admit that this is a valid inference from the duration of the flash being only one ten-thousandth of a second, and the fact that light requires one-tenth of a second to produce its full effect on the retina, if we *assume* the illumination to be proportional to the time, still the brightness would come out one-thousandth part of its real value.

On the whole, the least satisfactory chapter is that on "Practical Units of Measurement." This is hardly surprising; measurement has been the weak point of popular science, nor can it be easy to make it clear to readers who have to be told what a decimal means and whose general intelligence the authoress rates so low that she takes pains to impress on them that iron attracts a magnet as much as a magnet attracts iron.

It is quite true that the electric energy supplied should be the quantity measured by a house meter, but it does not follow that "The meter employed ought, therefore, to be a *voltmeter*, or measurer of electro-motive force, as well as an ampere, or *ammeter*, measurer of current strength." Nor is it quite accurate to say that "If a constant pressure between the house mains can be secured, it is sufficient to measure only the quantity of current that passes." Doubtless the authoress means quantity of electricity.

We owe a debt of gratitude to Mrs. Caillard for rescuing from oblivion the quaint prophetic vision of the Rev. Joseph Glanvil, Rector of Bath in 1750. It is too long to quote, but the reader will find it on page 251.

Mrs. Caillard is, perhaps, a little too ready to accept doubtful hypotheses as proved facts. She is quite sure of magnetic lag, and she expects, with confidence, a "solution of the problems surrounding the ultimate nature of matter."

She is also fond of personifying. "Since lightning is in reality simply an enormous electric spark, it is only reasonable to suppose that it will behave like one." "The two charges are (if the expansion may be permitted) so occupied with each other." "Dammed up water and electric charge are much in the same situation. Both are unnaturally confined, both will escape from confinement if they possibly can." These are only a few instances, out of many that we have observed, of the poetic tendency of the writer's imagination.

In conclusion we may note the excellence of the illustrations, and the almost total absence of misprints,—we have found only two or three in the whole volume; the type is clear and pleasant to read, and, an important consideration, there is an excellent index.

Light. An Introduction to the Science of Optics. By E. Wyndham Tarn, M.A. London: Crosby Lockwood & Son. 1890.

Mr. Wyndham Tarn is, or ought to be, well known amongst architectural students for his many works on the scientific side of architecture, which deservedly hold a high place amongst elementary text-books.

The present work will doubtless prove of equal value as what it professes to be, an introduction to the subject of optics. While it cannot be claimed that there is very much which is new in the work there is no doubt that the information given is clearly expressed, and adequately covers the elementary properties of light, while the fact of its being the writing of an architect naturally accounts for the prominence given to those applications of scientific principles which come in the way of the professional architect. Thus the illumination of vaults by prisms is clearly explained, and a careful study of the book will enable the young practitioner to distinguish between valuable and worthless manufactures of pavement-lights for particular purposes. Again, the explanation of the action of light upon plants will furnish him with a reason for the employment of certain kinds of glass for conservatories and greenhouses, and the avoidance of others.

The account, too, of phosphorescence, with the explanation of the various luminous paints dependent upon phosphorescence for their properties, is of value to a practical man. But, perhaps, of the whole work the part most useful to the architect is the chapter on "Illumination by Diffused Light," based to a considerable extent on the writer's paper "On the Relative Illuminating Powers of Different Portions of the Sky Surface," published in the *Builder* for December 15, 1866. This chapter derives its value from the bearing which the question has on the matter of ancient lights, and the relative effect which would be produced by particular obstructions.

As the work forms part of "Weale's Rudimentary Series," and is published at the low price of 1s. 6d., it is well worth the while of every architectural student to purchase and peruse it carefully.

Concrete: Its Use in Building. By Thomas Potter. Winchester: The *Hampshire Observer* Company. 1891.

This little book on concrete is a new edition, entirely re-written, of a work published by the author some fourteen years ago to make clear to all who are interested in concrete the means by which it may be successfully employed. It will be found to contain, in addition to the author's experience, much information which has been already given in the form of papers read before various technical societies on the subject, as well as an outline of the general history of the use of concrete, and much other practical matter which will be of value to those who use this material.

Correspondence.

To the Editor of The Builder.

WORK BEFORE BREAKFAST.

Sir,—"C. B." has struck a good nail on the head by his letter in the current issue of the *Builder*, and the editorial note calling attention to it, will, I hope, go a long way towards clenching it.

The leaving home at 4.30 a.m. to go to one's work is no fancy picture. In my own experience, I remember when,—it must be close on thirty years ago,—I was working as a journeyman in London, and lodged at Albany-road, Camberwell, S.E., and for some time was employed at the Hackney Town-hall, then building. There were several young men lodging in the same house as myself, and sometimes the landlady,—a good soul, who was a mother to us all, and who used to call us in the morning,—was wont repiningly to say: "I really get almost no sleep at all at nights. First, I've got to listen to hear my young chaps fastens the front door properly, until Mr. Brown,—he's the last, because he's on the newpaper,—comes home at 2.30, and then at 4 I've got to start waking 'em, beginning with Mr. Hems,—that's the time he's called." We (Mr. T. Candy, who lived near, and was at work at the same place with me, but who has now a large Monumental business at Beckenham) used to start at 4.30, and by hard walking would reach the job by 5.45, and thus secure a quarter of an hour's rest before commencing the labour of the day. When, after a time, I gave up my lodgings at Camberwell, and went to live at Hackney, I suddenly had my job shifted to Chelsea, and so,—as regards the mornings,—only got out of the pan into the fire! My own case, so long ago, was the same as thousands of others at that time, and,—with more or less varied circumstances,—is, no doubt, that of thousands to-day.

In my own place (I have been in business just a quarter of a century) no one ever starts work before

* See "Note" in the *Builder* of January 3 last.

7 a.m., and I should be very much obliged to every one of my staff if they did not commence until after breakfast. But, in this country, there seems a reluctance to have breakfast at a decent hour, and to start work, as everybody should do, at 8 a.m. When I have urged the reform,—as over and over again, from time to time, I have done,—the principal objection raised is the women. My own men go to breakfast,—as is customary hereabouts,—at 8.30, and I believe they all find,—to a greater or less degree,—that their wives, mothers, sisters, landladies, or whoever it is of the opposite sex they are dependent upon for the preparation of their meals, only get up just in time to have breakfast ready at the comparatively late hour quoted.

I qualified my remark just now by restricting myself to this country, as it certainly does not apply to the United States, where, in the building trade, work before breakfast is wholly unknown, and everybody starts the labours of the day after breakfast, and at 8 a.m. Yet the American people are much earlier birds than we are, and I have seen more people in the streets of Chicago at 7 a.m. than one would find in corresponding parts of London at 10 o'clock. HARRY HEMS.

Exeter, October 17, 1891.

SIR,—For some time back I have had great sympathy with the idea or suggestion by "C. B.," on page 296, that workmen in the building trade might with great advantage to all concerned begin work at 8 a.m. in place of at 6, and that by not beginning until 8 they might take breakfast before beginning work, and so have only one break in the middle of the day,—viz., for dinner. I am much amused at the fanciful objection made by some workmen to this: "O! we could not take our breakfast immediately after rising." To meet that objection I would simply say, "Then rise twenty minutes earlier and take a walk." I have taken my breakfast for years back before going out in the morning, and dinner five hours or so after, and feel the plan a good one. The plan would make workmen healthier and longer-lived than the present system.

I do not go in for 8 to 6, but 8 to 5, and 1 p.m. on Saturdays. This would give more time for mental culture and for home enjoyments.

A MASTER TRADESMAN.

STONE AT HAMPTON COURT.

ON page 270 of your issue of 10th inst. we learn that the erection of the addition to this building was greatly hindered in 1690, owing to the difficulty of obtaining Portland stone, in consequence of the French fleet being in the Channel, and consequently a little Bath stone was used, which, however, became so shattered that it had to be replaced by Portland stone.

On page 295 of your issue of 17th inst., Mr. Wonnacott has been good enough to give us the cost of certain materials. Could he kindly tell us what price was paid for Portland and Bath stone in those days delivered in London, if possible; if not, at the quarries, and cost of transit to London?

QUERIST.

The Student's Column.

MARBLES.—XVII.

DEVONSHIRE MARBLES.

SEEING that the hard, crystalline Carboniferous Limestone is so well developed in Derbyshire, it is not remarkable that that county yields an abundance of marble, which is extensively employed for decorative purposes. The majority of the marbles obtained from this formation are easily distinguished from the abundance of Crinoids contained in them. These organisms were very plentifully distributed in the seas of the Carboniferous and other Palæozoic periods, and myriads of their skeletons are preserved in the great limestone under discussion, and form the chief "markings" on the marbles raised from it. Judging from the remarks of those who have occasionally alluded to the nature of these different "patterns," it would seem desirable to say something concerning the organisms found embedded in the stone from which the marbles are cut. The name Crinoidea is derived from κρίνον, a lily, and is used to designate certain marine animals resembling lilies in their general appearance. Crinoids, as they are commonly termed, form a "class" belonging to the sub-kingdom Echinodermata. This group also includes the sea-urchins, star-fishes, brittle-stars, and holothurians, with various extinct, stalked forms more or less closely resembling the Crinoids. Although so abundant in ancient geologic times, living Crinoids are, with one or two exceptions, comparatively rare, and most of the recent genera have come to light on dredging in deep seas. The ordinary fossil form met with in Derbyshire marble may be familiarly described as a stone cup with erect, ornate fringe round its rim, and having a long stalk fixed at the base, hence its being likened in shape to a lily. The cup is made up of several geometrically-shaped pieces, or plates, and the fringe or arms crowning it are composed of a large number of small pieces. The stem in the common Carboniferous Limestone species is made of several segments (joints), which are approximately circular on plan, having a hole in the centre. When weathered out of the stone these segments can be threaded together, and the long stalk may thus be reproduced. On examining a polished surface of the marble it will be observed that the stalks form the bulk of the stone, and the "pattern" largely depends on the various dispositions of these stalks. Perchance, the slab may be cut along the whole length of some of them, and long streaks result; many sections will be found to be cut more or less at right angles to that direction, and we get circular spots; oftener still we find that the stems have been cut obliquely, and a corresponding "pattern" is thus produced. The small pieces which formed the arms of the Crinoids are often not in place, and these being intersected at various angles, assist, with the remains of certain other smaller organisms, in forming the base of the stone, the remainder of which normally consists of crystalline calcite. From this short description the student will perceive that no two pieces of Derbyshire Carboniferous Limestone marble are exactly alike.

Speaking generally, this class of marble is very durable, though we must remember that, being so largely,—almost entirely,—composed of carbonate of lime, its polish soon becomes dull when exposed to the deleterious influences of the weather in large cities. The stone being so uniformly crystalline, it takes a high and regular polish. It is said by some to be suitable for sculptured work, in which opinion, however, we certainly cannot concur. The various sections of the Crinoids may look very well in marble chimney-pieces, slabs, large urns, and the like, but they do not add to the appearance of sculptured work any more than does the deep red felspar in a coarse-grained granite. Imagine a statue, representing a human being, having its nasal organ embellished with a crystal of red felspar, and one of its eyes partially composed of black biotite mica, and we are presented with a somewhat parallel case to what might happen in attempting to treat a similar subject in Crinoid marble. Groups of flowers cut in "imperishable stone" look none the better for having white, shimmering Crinoid stems running through them. But when the marble is polished and manufactured into simpler forms,—slabs, panels, &c.,—it ranks in beauty with those porphyritic granites of Cornwall and elsewhere so justly esteemed for interior decoration.

According to their pattern the Derbyshire marbles are distinguished by various names, such as "bird's-eye," "dog-tooth," or "mussel," "entrochal," "shelly," and "breccia"; in colour they are white, grey, dove, blue, black, or russet. The limestones from which they are derived have been divided into four classes, known as first, second, third, and fourth limestones, separated from each other by an amygdaloidal greenstone,*—an igneous rock. The ornamental stones are mostly confined to the first three formations. The Crinoidal, Entrochal, or Encrinital marbles are principally obtained from the first and third series; whilst the black is obtained from the second limestone. The shell marble is also yielded by the last-mentioned horizon; it is largely composed of *Spirifer* and *Productus*, two genera of that class of "shellfish" known as Brachiopoda. According to Farey, the three upper limestones from which the whole of these marbles are raised, extend over an area of nearly 51,500 acres.

The black marble is quarried in Monsal Dale, near Little Longsdon, and at Wirksworth, Bakewell, and Ashford. Gwilt states that machinery for cutting and polishing the blocks was first used in 1748, at Ashford, where the marble is a deep, rich black, and very fine in texture. The beds run thin, however, the thickest measuring 10 in. The grey "fossil" marble, mottled and veined, is found at several places, but principally in the quarries between Sheldon and Flagg; the purple veined is obtained at Ricklow Dale, near Monyash; the "bird's-eye" comes from between Ashford and Sheldon; whilst, according to Mr. Lee,† the "dog-tooth" or "mussel" marble runs between coarse grits in the coal district at Tupton, and other places in the neighbourhood. The last-mentioned variety is very ferruginous, and occurs as a bed only 8 in. or 10 in. in thickness.

Several of these Derbyshire stones, in addition to the uses already mentioned, are employed in the production of mosaic work of very creditable design and fineness of execution. Marble from the following additional localities may be seen in the Museum of Practical Geology, Jermyn-street:—Middleton, Bonsall, Matlock, Nether Haddon, Allport, One Ash, Stony Middleton, Buxton, Miller's Dale, Ricklow Dale, and Tideswell.

At Wetton, Ecton, and other places in Staffordshire, marble of similar kinds to some of that found in Derbyshire is quarried in the Carboniferous Limestone.

ANGLESEA MARBLES.

The marble raised in the Isle of Anglesea comes principally from the Carboniferous Limestone of the south-east corner near Penmon Priory, about four miles from Beaumaris. The quarries form quite a conspicuous feature in the district. There appears to be very little trouble incurred in getting the best stone, as the superincumbent rock is eminently suitable for building purposes and has been largely used in the vicinity. The marble is mostly of a greyish brown tint and beautifully marked; there is also a black variety. The limestone at Penmon is sufficiently crystalline to take a fine polish. Fossil corals which have weathered out of the stone, are very plentiful, and afford excellent illustrations of the manner in which it disintegrates. Curiously enough there is intercalated with the limestone beds a stratum of strong grit much resembling the celebrated Millstone Grit of Yorkshire and elsewhere, and it has been raised for similar purposes to the north country stone,—millstones may now be seen lying about the old workings. The quarries of modern date are near the sea-shore, and the blocks can be shipped with facility. Saw-mills have been erected and much polishing is done, but we are informed that the bulk of the material is sent away in the rough. The stone may be seen in numerous structures in the locality, and in the Town-hall, Birmingham, the interior of the Liverpool Conservative Club, the Walker Art Gallery, and other places.

Another quarry, known as the Penryn (Moelfre), is situated on the north-east coast of the island, about one mile from the north end of Red Wharf Bay, and has a frontage to St. George's Channel and Traeth Bychan Bay. It was first opened about seventy years since, but working was suspended in 1872; during the past year efforts have been made to recommence operations. The marble is found in several distinct beds, the yielding capacity of which has been carefully studied. There is cream-coloured marble in two beds, each 2 ft. in thickness, the lower being the lighter in tint. From these beds blocks from 3 ft. to 8 ft. in length, and 18 in. to 5 ft. in width, may be obtained. On a lower horizon a cream and dark brown "fossil" marble, which is finely figured and well adapted for chimney-pieces and decorative work, is met with; the bed is 1 ft. 4 in. in thickness, from 18 in. to 6 ft. in length, by 18 in. to 3 ft. in width. Then comes a variegated "fossil" marble, below which are found five distinct beds, from 1 ft. to 2 ft. in thickness, of black marbles, the three lowermost being mottled. The blocks run from 18 in. to 5 ft. in length, by 18 in. to 4 ft. 6 in. in width.

Greenish serpentine, frequently associated with limestone, occurs at several localities amongst the metamorphosed Cambrian rocks of Anglesea, notably at Rhôscolyn where the stone has a dark green ground with delicate lines and veins of dark grey. This is sometimes known as Mona marble.

Marbles appear to have been extensively worked in the island some years since on the lands of Monachty in the parish of Llanfairyghornwy. Thomas Pennant, writing in 1733, states that the stones principally obtained from thence were green, black, white, and dull purple irregularly disposed. Certain parts were intersected by small cracks, or by asbestos veins, which are described as not being capable of taking a fine polish. Specimens from these old workings are still in existence.

ISLE OF MAN MARBLES.

These ornamental stones are chiefly raised from rocks of Carboniferous age, which are mostly confined to the southern extremity of the island, near Castletown, where they occupy an area of about sixteen square miles. The

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* Hunt & Rudler, "Guide Mus. Pract. Geol.," 1877, p. 30.

† "Marble and Marble Workers," 1888, p. 32.

different marbles have practically the same properties as those alluded to from Derbyshire.

The Poolvash quarry, worked for over 200 years, is well known as producing a fine black stone. It is chiefly used for mantel-pieces, tombs, steps, bases of pulpits, and the like, and has been sent to many places in the kingdom,—notably to Dublin and Liverpool. The steps of St. Paul's Cathedral are from these quarries. The marble tools with tolerable facility, and is stated not to be so hard as Irish or Derby black. Judging from the state of preservation of several headstones of it, dating from the year 1700, found in churchyards in the vicinity of the quarry, the material appears to be very durable.

A grey Encrinital and shelly marble, used for tables and chimney ornaments, is also found at Poolvash.

Another black marble is raised from the lower Carboniferous Limestone at Port St. Mary. It is hard and durable, takes a good polish, occurs in blocks and flags of great size, and is used for piers, floorings, tombstones, &c.

A pale marble, which has been largely raised for building purposes in the island, comes from Scarlett, near Castletown. Quantities of the material are shipped to Dublin and other places, and several monuments made of it have gone to South Africa. Castle Rushen (in Castletown) a Danish fortress built 900 years since, was constructed of Scarlett stone, and its excellent preservation testifies to the enduring qualities of the material. Other examples of its use may be found in King William's College, St. Thomas' Church, Douglas; and Castletown pier.

GENERAL BUILDING NEWS.

Restoration of Selby Abbey.—The Abbey Church of Selby, as restored, was reopened on the 13th inst. The portions of the old church which have just been dealt with are the choir and north transept. Twenty years ago the nave was restored under the direction of Sir Gilbert Scott, and the improvements just made have been carried out under the superintendence of Mr. J. Oldrid Scott. The south-west wall and the clearstory above have been rebuilt, whilst the floor has been raised to the old level. The old miserere stalls have been restored, the fronts being entirely new, and the sacrarium has been renovated by the laying of a marble pavement, the gift of Mr. T. Holdsworth, of Clay Cross, who has also just presented a reredos, which is being erected by Messrs. Bridgeman, of Lichfield, from designs by Mr. Scott, the architect. One of the alterations effected has taken place in the east window, which has been restored by Messrs. Ward & Hughes, of London, under the superintendence of Mr. T. Curtis, the head of the firm. The cost has been defrayed by Mr. William Liversidge, of Selby. The old drawing and harmony of colour, so far as these were indicated in the window before the work of restoring it was commenced, have been adhered to. The organ has been removed from the south aisle to the Latham Chapel, after having been rebuilt and enlarged by Mr. J. J. Binns, of Bramley. Amongst other works, the north transept has been underpinned, the lead on the roof has been recast, the arcading on the sides of the aisles has been attended to, and the parts of the edifice east of the tower have been overhauled. We gave a view of the Abbey, from a drawing by Mr. Arnold B. Mitchell, in the *Builder* for January 4, 1890.

Proposed Town-hall for Mossley, Lancashire.—The Corporation of Mossley having applied to the Local Government Board for powers to borrow money for the purchase of the Whitehall estate, which they intend to convert into a town-hall and pleasure grounds, Mr. S. J. Smith, Government inspector, held an inquiry into the matter at the Mossley Corporation Offices on the 6th inst. The Town Clerk said the mansion-house and grounds some twenty years ago cost something like 100,000*l.*, and now they were offered to the Corporation for 4,000*l.*, and they intended to borrow 2,338*l.* for the purposes of a town-hall and 2,162*l.* for public pleasure grounds, the purchase money for each being 2,000*l.*, and the remaining small sum being required for necessary alterations. The inspector afterwards viewed the building and the grounds.

Catholic Church, Trim.—The foundation stone of the new church dedicated to St. Patrick, Trim, County Meath, has just been laid by the Rev. Dr. Nulty, Bishop of the Diocese. The church, which will be of Gothic style, will cost about 15,000*l.* It will measure in length, between the east and the west gable walls, 140 ft., in width, between the aisle walls 60 ft., and across the transepts 77 ft. The plan consists of a nave, with clearstories, pierced with three light windows, rising above the aisle roof, having a series of arches of wrought stone opening into the aisles on each side, with marble bases, polished granite shafts, and moulded caps sustaining the arches, the series of arcading being continued into the side chapels, transepts, chancel, and nuns' choir, all of similiar character. The chancel is 27 ft. 6 in. in width, and 32 ft. in depth and is flanked by the nun's choir and sacristies arranged with porches to each and to the transepts, other porches at the west end giving access to the aisles, whilst the nave is approached through the doorway of the tower, the latter standing at the western end and measuring 26 ft. square outside, capped with a pierced spire rising to the height of 200 ft., and surmounted by a cross. The doorways will be moulded, and deeply recessed with jamb shafts of polished granite, having moulded cap and base, and the windows have moulded jambs and arches, with cuspings. The chancel western and transept gable windows consist of three and five lights with geometrical tracery and label moulding with carved bosses. The roofs will be of wrought and moulded timbers, with framed principals, arranged in bays, and the interspaces panelled and moulded in pitch-pine and other woods, and the ceilings of the chancel, tower porch, baptistry, &c., groined with moulded ribs springing off moulded shafts and corbels. The internal cut stone is of freestone, and the exterior dressings of white limestone, with dark blue pointed ashlar facing to the external walls, which are lined internally with brick. The roofs are to be covered with slates in two colours. The floors are to be laid with boards under the seats, and oak wood blocks in ornamental patterns in the passages. The furnace chamber for heating the building by means of hot water is placed under the boys' sacristy, and the organ gallery is situated at the west end, as also the baptistry, which also opens through a moulded arch into the aisle. The architect from whose designs and under whose supervision the church is being built is Mr. William Hague, of Dublin, Mr. Patrick Nolan, of Monaghan, being the contractor.

Presbyterian Buildings, Heaton.—A block of new buildings in connexion with the Presbyterian Church at Heaton, Newcastle, was opened on the 7th inst. by Councillor Sutton, J.P. The complete scheme includes the erection of a new church, besides a lecture-hall and school combined, class-rooms, and caretaker's house. The buildings are situated at the north side of the railway in Heaton-road. The lecture-room, caretaker's house, and class-rooms are completed. The lecture-hall is 60 ft. by 40 ft. The room is capable of accommodating between 500 and 600. The cost of the buildings already erected, including cost of site, has reached 3,100*l.* At the west end of the lecture-hall are three class-rooms. The caretaker's house is above these rooms, and consists of four rooms. Mr. Newcombe, of Newcastle, is the architect, and the contractor is Mr. Humphrey Atkinson, of Blaydon.

New Church, St. Paul's, Harringay.—On the 8th inst. the nave and aisles of the new church of St. Paul, Harringay, was consecrated by the Bishop of London. The style of the building is thirteenth-century Gothic, with lofty nave, arcade and clearstory, and lean-to aisles, built with red Bracknell bricks (facing internally as well as externally), Bath stone arcades, strings, window and door dressings. The nave roof is of red fir, framed with curved and moulded principals, springing from stone caps, and shafts boarded inside to an arched shape, having no cross-ties visible. Externally it is covered with Eureka grey slating. The nave is 97 ft. 6 in. long and 29 ft. 9 in. wide, the total width of nave and aisles being 62 ft. 3 in.; the height to nave wall-plate from floor is 37 ft., and to apex of roof vault 52 ft., and ridge 65 ft. When the chancel is built, the total length of nave and chancel will be 130 ft. The seats are of oak, and the altar is of cedar wood. The architect is Mr. G. M. Silley, of Craven-street, Strand, W.C.; and the builders are Messrs. Treasure & Son, of Shrewsbury and London.

United Presbyterian Church, Pollokshields.—The new Trinity U.P. Church, which is situated at the junction of Shields-road and Glencairn Drive, Pollokshields, was recently opened. The church is planned as nave and aisles, with a recess 20 ft. deep and full width of nave, in which is placed the organ. The nave arches are carried by Peterhead granite piers, with carved stone capitals and moulded bases. Messrs. Dawson & Sherriff, Glasgow, were the carvers, and did the pulpit, &c.; Mr. James Morrison, joiner, did the oak fittings; and Mr. Crawford executed the oak carvings. Mr. John Sim was the clerk of works, and Mr. W. G. Rowan, of Glasgow, was the architect.

Institute for the Young Women's Christian Association, Belfast. — There has just been opened at Belfast a new institute for the accommodation of the local branch of the Young Women's Christian Association. The institute, which is situated in Donegall-square East, as at present arranged, comprises an assembly room, 56 ft. long by 21 ft. 6 in. wide, which, with its gallery, is capable of accommodating over three hundred persons. It is lighted by roof lights, and has a platform at one end. It is wainscotted in pitch-pine, with work tables hinged and attached thereto. The ceiling is sheeted in picked white wood, arranged into panels by the roof timbers, and with pitch-pine mouldings. The ventilation is accomplished by Tobin tubes and ventilating sashes, and roof extract ventilators. On the basement floor are the kitchens, with scullery and pantries; also a dining-room, 44 ft. by 21 ft. wide. On the first floor are the reception-rooms and assembly hall, approached from the street by marble steps, and a vestibule and hall, laid with ceramic tiles. On the second floor are the drawing-room, library, and lady superintendent's offices; while on the third and fourth floors are bedrooms and dormitories. The contract for building and reconstructing has been undertaken by Messrs. J. Lowry & Son, of Belfast, from the plans and under the superintendence of Mr. J. J. Phillips, architect, Belfast.

Wesleyan School Buildings, Leeds.—A new Sunday school, in connexion with Hanover-place Wesleyan Chapel, was recently opened at Leeds. The new school has been erected from the designs of Mr. G. F. Danby, architect, Leeds, on ground immediately adjoining the chapel. The building comprises an assembly or school-room, 70 ft. long and 35 ft. wide, lighted by windows to the front and by clearstory windows on each side. There is a recessed platform at one end, communicating with retiring-rooms. The large room has an open wood roof, 25 ft. high in the centre. Ten class-rooms, varying in size, are placed at the sides. There are two entrances, with glazed screens and tiled floors, at the front; and a third from Hanover-square. The rooms are ventilated by inlet tubes and extracting flues, and warmed by the low-pressure hot-water system. In the basement an apparatus-room, kitchen, stores, and other conveniences, are placed. The buildings are of pressed bricks, with stone dressings. The work has been carried out at a cost of about 2,000*l.* by Mr. P. Stather and Messrs. J. Ledgard & Sons.

Board Schools, Castlethorpe.—On the 15th inst., the New Board School at Castlethorpe were opened by Lord and Lady Carrington. The schools are situated in the centre of the village, and are built of brick, with Bath stone dressings. The roof is of Broseley tiles, and over the principal entrance is a small tower and bell-cot. The rooms are adapted for the accommodation of about 150 children. The large room is 46 ft. 6 in. by 20 ft., the class-room 18 ft. by 17 ft., and the infants' room 20 ft. by 17 ft. At each entrance there is a cloak-room and lavatory. The whole of the rooms are warmed by Stainton's medium pressure hot-water system, and there are open fireplaces for assisting the ventilation. At the back of the schools there are playgrounds laid with asphalt, this work having been done by Mr. J. Ward, of Northampton. At the end of the playground there is also a residence for the master and mistress. The architects were Messrs. H. H. Dyer and Son, Northampton, and Messrs. Adnitt and Everard, of Rushden were the builders. The school fittings were supplied by Messrs. Wake and Dean, London.

Re-Opening of Christ Church, Ebbw Vale.—Christ Church, Ebbw Vale, Monmouth, was reopened, on the 18th inst., by the Bishop of the Diocese, after alterations. The interior has been redecorated. The tower, which was not previously finished, has been completed, with new wooden floors, large double doors and ceiling, windows glazed, &c.; the seating, roofs, &c., have also been cleaned and varnished, new brass gas standards have been fixed in the choir, and the Welsh church underneath the chancel has also been cleaned out and finished in colour. Messrs. Kempson & Fowler, of Llandaff, were the architects. The builder employed was Mr. W. Morgan, of Ebbw Vale, and the decorator was Mr. J. E. Morgan, of Canton, Cardiff.

Methodist Church, Glenavy, Antrim.—The foundation and memorial stones of the new Methodist Church, Glenavy, were laid on the 10th inst. The new building will be constructed of red, perforated brick, with sandstone dressings of like colour. The front gable is relieved by a projecting porch, and by buttresses which terminate in moulded stone pinnacles. In the interior the length of the building is 48 ft.; breadth, 26 ft.; height to top of cone in ceiling, 22 ft. The seating has been planned to accommodate 140 people. The pulpit will be constructed of selected pitch-pine, while the pews and wainscotting round the sides of the church will be of similar material. The ceiling is octagonal, in section, and is to be panelled by ribs of coloured pitch-pine. The architect is Mr. J. J. Phillips, of Belfast; and the builder Mr. Robt. Calwell.

Wesleyan Centenary Chapel, Newcastle.—The Wesleyan Centenary Chapel in Dilston-road, Newcastle, was opened on the 8th inst. The building, which is situate at the corner of Dilston-road and Callerton-place, is designed in the Gothic style, and has a spire 90 ft. high. The structure comprises a chapel to accommodate 900 persons, minister's and stewards' vestries, class-rooms, and caretaker's house, the latter having a separate yard and entrance. There is a principal entrance to the chapel in Dilston-road, and additional entrances are provided at each side, which also give access to the gallery floor. A separate entrance in Callerton-place leads to the vestry, choir, and gallery. Communicating with the chapel by means of a corridor is the lecture-hall, which seats 400. On each side of the hall separate entrances are provided for boys and girls, with their respective class-rooms and infant-school. In addition there is a tea-room for social gatherings. The seating, gallery front, rostrum doors, &c., are of pitch-pine, and the remainder of the timber roof arcading, &c., where exposed to view, is of dressed and stained redwood. The windows are glazed with tinted Cathedral glass fixed in lead work. Gasaliers suspended from the

ceiling, having reflectors, with galvanised iron tubes carried to a Boyle's air-pump ventilator fixed in the roof-turret, will be used for artificial lighting. Hot-water appliances on the low-pressure system will be used for heating purposes. Coils are fixed at the entrances and at the inlets for the introduction of fresh-air. The architect was Mr. J. W. Taylor, Newcastle. Mr. G. H. Mauchlen has has been the contractor, and the hot-water apparatus was supplied by Messrs. Dinning & Cooke, Newcastle. Mr. R. Yates has acted as clerk of the works.

New School and Mission Hall, Belfast.—On the 10th inst. the memorial-stone of the new school and mission buildings, which are in course of erection in connexion with College-square Presbyterian Church, Belfast, was laid by Mrs. J. S. Cathcart. The site faces Durham-street, Albert-street, and Fox's-row. In Durham-street is placed the entrance to the sexton's house, whilst the main approach to the lecture hall is afforded by a doorway in Albert-street. A vestibule gives access to the hall, 48 ft. by 27 ft., with boiler-house and yard adjacent. The upper hall is reached by a staircase from the vestibule, and is over 30 ft. long by 27 ft. wide, lighted by windows on three sides. A committee-room is also placed on the same floor. The material used is principally red brick. The roofs are covered with Bangor countess slates, with red roll ridges and terminals. The heating is arranged by open fireplaces. Lead lights are arranged for the principal windows, and the ventilation will be by means of extracting shafts rising through the ridge. Messrs. W. M'Cammond & Son are the contractors, and Messrs. Young & Mackenzie the architects.

Baths, West Hartlepool. — Some baths have been erected at West Hartlepool by the Hartlepool Baths Company, and consist of Turkish-bath rooms to accommodate twelve or fourteen at one time. The walls of the hot rooms are made with cavities to prevent loss of heat, and the inside finished with white glazed bricks. The ceilings are constructed of "adamant," and the floors tiled. The heating of the baths is by Messrs. Constantine's convoluted stove, and we understand (according to the account furnished to us by this firm), that the whole planning and construction of the building has been left in their hands to save unnecessary outlay of money (on an architect's commission, we presume) and "in order to make the most of the space," which an architect is evidently supposed to be incapable of doing. Certainly the plan forwarded to us does not look like the work of an architect—whether it "makes the most of the space" may however be a question.

Schools, Gorseinon.—Mr. J. B. Morgan, architect, Llanelly, has been instructed by the Swansea United District School Board to prepare plans of a school to be erected at Gorseinon providing accommodation for 439 children.

STAINED GLASS AND DECORATION.

Decoration of St. Joseph's Church, Highgate.—The paintings on the walls and roof of this church are now completed; they are among the largest and most complete set of mural paintings in any church in London. The roof has large angels surrounded by decorative ornament. The clear-story figures represent the national patron saints of England, Ireland, and Scotland, *e.g.*, SS. George, Edward the Confessor, Alban, Gregory, Augustin, Patrick, David, Margaret, &c. Whilst along the walls are twelve paintings (each 12 ft. by 6 ft.) of the principal Christian mysteries, concluding with the Descent of the Holy Spirit, over the chancel arch. The work has occupied the attention of the artist, Mr. R. H. J. Westlake, for nearly three years.

Redecoration of the Philharmonic Hall, Liverpool.—During the summer months the Philharmonic Hall of Liverpool has been redecorated. The ceiling is divided into panels by beams running diagonally across, and the panels are filled with ornament in light soft greens and reds with gold on a creamy yellow ground, and the beams themselves are treated in ivory and gold. The cove panels are coloured in the same colouring of the ceiling panels. The guilloche ornament on the broad bands which divide the panels of the cove are coloured in soft browns and are gilded. On the frieze below the ivory-coloured cornice a festoon ornament in soft greens and orange is painted on a gold ground. The arches which separate the body of the hall from the galleries and orchestra, are treated in ivory and gold, the soffits being filled in with Tynecastle modelled canvas. The eight spandrel panels, as well as the soffit under the orchestra arch and the two panels between the pilasters at the west wall, are filled in with ornament of an Italian character on a dull gold ground. The wall behind the orchestra has upon a soft terra-cotta ground a Venetian pattern in bronze. The organ case has been treated in ivory colours and gold. The two boxes which formerly projected from the sides of the orchestra have been removed, the panels have been filled in with an embossed material, and the front of the orchestra is painted in shades of reds, browns, and gold, with panels of embossed material also gilt and lacquered. The fronts of the boxes are in Tynecastle modelled canvas treated in ivory and gold, the fronts of the gallery are of the same material and colouring, and a stringcourse runs round the walls under the boxes. The pillars between are gilt. Under the stringcourse the dado is painted in bronze green and yellows. The panels, which are of perforated zinc, for the purpose of ventilation, have a gilt ornament on a dark ground, and the lower part of the walls is covered with embossed leather material, finished in bronze-green colour. A subject figure has been introduced into the wall opposite the orchestra. It represents four female figures holding festoons of flowers, dancing to music played by a number of cupids. The contractors were Messrs. George Dobie & Son, of Edinburgh.

Memorial Window, Parish Church, Fenton.—A memorial window to the Turner family has been placed in the south chapel of the new parish church, Fenton. The subject of "The Great Healer" runs through the three lights, our Lord occupying the centre light, and the sick with various diseases, awaiting healing, are shown in the side lights. The subject is placed under light canopies in harmony with the period of the stone work, viz., fourteenth century. Angels in the tracery bear the inscription, "And the leaves of the tree were for the healing of the nations." The window was designed and executed by T. W. Camm, of Smethwick, Birmingham.

FOREIGN AND COLONIAL.

France.—M. Hugues has just completed, for the decoration of the Bibliothèque Nationale, a marble statue symbolising "La Gravure." Two other statues, representing "Les Manuscrits" and "Les Imprimés," have been commissioned from M. Constans and M. Labatut respectively; and a fourth statue personifying "Les Médailles" was commenced by Mr. Gautherin and continued after his death by M. Chapu, whose lamented decease again interrupted the progress of the work.——The friends of the late Théodore Ribot have organised an exhibition of the painter's works at the Ecole des Beaux-Arts. Madame Ribot, it is announced, is going to offer to the Louvre one of her husband's best pictures. —— MM. Marquest and Injalbert, sculptors, have been appointed professors at the Ecole des Beaux-Arts, in place of Chapu and Guillaume.——The Jay Prize, in favour of the architectural pensioner of the year at the Villa Medici, has been awarded to M. André.——There is to be inaugurated to-morrow, at the Mont-Parnasse Cemetery, a monument erected by subscription to Emmanuel Gonzales.——M. Yves Guyot, the Minister of Public Works, has just inaugurated two new railway lines—the first from Troyes to St. Florentin, the second from Saint-Maurice to Bussany, where there is a famous hot-bath establishment.——The Académie des Beaux-Arts has to award, for the first time in 1893, the Piot prize, to be awarded alternately to the best representation in painting and in sculpture of the figure of a nude infant of from eight to fifteen months old.* No condition of nationality is imposed, and the competition is open therefore to all artists.——The Société des Amis des Arts of Angers is to open an exhibition of painting and sculpture on November 14.——A Fine Art Society is to be founded at Narbonne, which proposes to hold exhibitions, institute competitions, conduct archæological excursions, &c., and which is expected to develop a great deal of new interest in art in the neighbourhood.——The municipality of Lyons is proposing to erect a Municipal Council Hall, to be designed and carried out by the municipal architectural department.——A competition has been opened at Bayonne for designs for a museum and library.——The town of Anzin (Nord) is about to erect a statue, in one of its public places, to a working miner, Joseph Fontaine, who has been a benefactor to the town. Fontaine had invented an apparatus which has saved the lives of many miners, and which he called the "Parachute de Mine." Fontaine had received a decoration from the Government, as well as the Montyon prize from the Academy.——M. Bartholdi, the sculptor, has completed his sketch for a funeral monument [in the Mont-Parnasse cemetery over the tomb of Deck, the eminent "ceramist" and former director of the manufactory of Sèvres. The monument, a very simple one, will be decorated with faïence similar to those of the vases in the Persian style which he used to paint so well. A bronze medallion portrait will be added to the monument.——A monument was inaugurated last Sunday at Pasques, near Dijon, to the memory of the soldiers killed in the combat there in 1870.——A statue of Joan of Arc, by M. Chabrousse, has just been placed at the angle of Rue Dumesnil and Boulevard St. Marcel.——The Société des Arts of the Seine-et-Oise district has just opened a competition for the best scheme for the sanitation of small dwelling-houses in the agricultural districts.——The pensioners of the Villa Medici have sent their drawings in to the Ecole des Beaux-Arts, where they will be publicly exhibited next week.

* We presume the founder of the prize considered that the infant figure is neglected or misrepresented by artists.

Berlin.—The Emperor on his recent trip to East Prussia made an entirely unexpected visit to the historical old castle Marienburg, at which the extensive works of restoration often noticed in our columns are being carried out. The Emperor, who made a very thorough inspection of the works, under guidance of the architect in charge, Herr Steinbrecht, made himself popular among the masons and bricklayers by the interest manifested in their doings and the conversations exchanged with them. The Emperor has granted the holding of a new set of lotteries, with the purpose of raising money for the continuation of the restoration on a grander scale.——During a recent visit to South Germany, the Emperor, on passing through Frankfort-on-the-Main, made an unexpected halt for the purpose of inspecting the Electrotechnical Exhibition *incognito*. He spent some two hours in the grounds.——The International Art Exhibition will, it seems, be wound up with a fair financial result. The total expenditure of the managing committee (including arrangement and running of the show) will amount to about 30,000*l.*, whilst, on the other side, the ordinary entrance tickets brought them some 22,000*l.*, and the season-tickets 3,500*l.*, to which sums there will be some 3,000*l.* in commissions for sold pictures to add, and the surplus from the sale of catalogues and the arrangement of a lottery.——A new synagogue, the third in the city, has seen its completion, unfortunately again on a disadvantageous site, irregular, and built in on three sides. The architects are Messrs. Cremer & Wolffenstein, of Berlin, who obtained the work as winners of a competition for the design in 1888. The cost of the building slightly exceeds 40,000*l.* There is seating room for some 1,800 (900 men, 900 women). —— The Berlin Cathedral question is again being brought to the foreground. Professor Raschdorff, who still has charge of the designs, has, we hear, in his present scheme only made a reduction in size by one-tenth of his last design. In this form he hopes to be able to erect the Cathedral for the 10,000,000 marks the Emperor does not wish to see exceeded. Where the money is to come from no one knows as yet,—perhaps by lottery. The Government, it is said, again intends trying to obtain a vote for part of the sum from the Imperial Reichstag next session, but it is scarcely likely to succeed, as the whole affair, thanks to the despotism shown in selection of site, "programme," and architect, is getting exceedingly unpopular.——We have referred to the poor result of the second limited competition for a design in a September number. Since our last note the Emperor has not published his decision on the subject, and, of course, competitors are all pleased at the long delay.

Durban Sewerage, Natal.—We are informed that the Durban Corporation have recently formally appointed Mr. W. H. Radford, C.E., of Nottingham, to be consulting engineer for the new sewerage of the borough, to act in conjunction with the resident borough engineer, Mr. John Fletcher, C.E. It is proposed to lay about twenty miles of sewers at once, special care being taken to make them watertight in consequence of sandy waterlogged subsoil. The sewage will be pumped into a set of storage and screening tanks, from which it will be discharged into the Indian Ocean on the ebb tide. The sewage outfall has been selected after careful tidal, wind, and wave investigations, and it will be near the end of the "Point" at the entrance to the Durban Harbour and Bay. Powerful engines and pumps will be put down, and probably part of the power will be derived from refuse destructors. The Corporation have obtained powers to borrow 150,000*l.* for the sewerage works, but the first section is estimated to be completed for 70,000*l.* Durban is the chief Natal port, and is a most enterprising, wealthy, and rapidly-increasing town, and in addition to the sewerage, the engineers above-named are associated with extensive additions to the waterworks, now approaching completion, and also with additions to the tramway system.

MISCELLANEOUS.

The Surveyors' Institution.—We are informed that the Council, acting on the powers conferred on them by the By-Laws, have extended the Session 1890-91 by fixing an ordinary general meeting to be held on Monday next, October 26, at 3 p.m., for the special purpose (and no other) of reading the Balloting List, No. 6, for the election of new members, whose applications were received before August 26. The first ordinary general meeting of the Session 1891-92 will be held on Monday, November 9, when the President, Mr. R. C. Driver, will deliver an opening address.

Royal Scottish Society of Arts. — This Society, we hear, is to hold a jubilee dinner on November 2, at the Waterloo Hotel, Edinburgh; the president, Lord Kingsburgh, in the chair. The Society was incorporated by Royal Charter in 1841.

The Sanitary Institute.—At a meeting of Council, held on the 14th inst., Sir Douglas Galton, K.C.B., F.R.S., in the chair, Dr. George Reid, Stafford County Medical Officer of Health, was duly elected Fellow; nine Members and seven Associates were also elected; and forty-two applications for Membership and Associateship were read.

COMPETITION, CONTRACTS, AND PUBLIC APPOINTMENTS.

COMPETITION.

Nature of Work.	By whom Advertised	Premium.	Designs to be delivered.
Drainage Scheme	Doncaster U.R.S.A.	20*l.*	Dec. 14

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
*Extension of Infirmary, Bow-road	City of London Union	*Official*	Oct. 26
Water Tank, Carrington	Manchester Corp.	do.	Oct. 27
Office, Buildings, House, &c. Cape Mills Farsley, Leeds	.....	C. S. Nelson	do.
Sewerage Works	Alnwick and Canongate Loc. Bd.	G. Wilson	do.
Sewerage, Tantobie and White-le-Head	Lanchester R.S.A.	J. E. Parker	Oct. 28
*Alterations, Additions, &c. Vestry Hall	Bromley St. Leonard Parish	A. & C. Harston	do.
*Water Supply Works	Conway, &c. Joint Water Supply Board	T. B. Farrington	do.
Street Works, &c.	Great Crosby Loc. Bd.	W. Hall	do.
Heating Apparatus, &c.	North Dublin Union	*Official*	do.
*Paisley Road Board School	Kingston-upon-Hull School Board	W. Botterill	do.
Sewerage Works	Tynemouth R.S.A.	A. S. Dinning	Oct. 29
*Cleansing, Re-decorating, &c. Town Hall	St. Anne (Limehouse) Committee	*Official*	do.
*Canvas Roller Blinds, Workhouse	St. Olave's Union, Rotherhithe	.....	do.
*Road Works, Southend	.....	W. V. Wilson	do.
*Paving Works, Woking	LondonCountyCouncil	*Official*	Oct. 30
*Reading and Library Rooms at Blaengarw	International Colliery Offices	.....	Oct. 31
Infants' School, New Tredegar	Bedwellty Sch. Bd.	James & Morgan	do.
Waterworks	Downpatrick Union	*Official*	do.
*Iron Bar and Wire Fencing	Islington Vestry	do.	Nov. 2
*Sewerage Works	do.	do.	do.
Lodge, Preswylfa, near Cardiff	C. F. Thompson	Seward & Thomas	do.
Filter Beds, Coton Mill	Northampton Corp.	J. Eunson	Nov. 3
* (1) Making-up Road (2) Pipe Sewer	Tottenham Loc. Bd.	J. E. Worth	do.
*General Works, House Drains, &c.	Leyton Loc. Bd.	W. Dawson	do.
Galvanised Iron Shed, North Dock	Swansea Harb. Trs.	A. J. Schenk	Nov. 4
*Sewerage Works	Fulham Vestry	J. P. Norrington	do.
*Making-up and Paving Roads	do.	W. Sykes	do.
*External Iron Balconies and Staircases	Hackney Union	*Official*	do.

CONTRACTS.—*Continued.*

Nature of Work or Materials.	By whom Required.	Architect, Surveyor or Engineer.	Tenders to be delivered.
*Police Station, Dwellings, Millhouses	Sheffield Watch Com	C. F. Wike	Nov. 4
*Building Chimney Stacks, &c. Eastern Fever Hospital	Met. Asylums Board	Keith D. Young	do.
*Fire Escape Staircases at Workhouse	Kensington Guardians	J. W. Aldwinckle	Nov. 5
Shop Premises, Halifax	.....	G. Buckley & Son	Nov. 6
*New School Room, &c. Witham	South Metropolitan School Dist.	*Official*	Nov. 9
*Swimming Bath	St. James' (Westminster) Parish Commrs.	Spalding & Cross	Nov. 11
*Construction of Lock	Barry Railway Co.	J. W. Barry	Nov. 14
New Schools, Beeches-road	West Bromwich Sch.B.	A. Long	Nov. 16
School and Class-rooms, Cinderford	Rev. J. P. White	.....	do.
*Coast Guard's Station, &c. West Looe	Admiralty	*Official*	Nov. 17
*Various Works, Newcastle-on-Tyne	N. E. Ry.	W. Bell	Nov. 18
*New Pier Head, Band Stand, &c.	Clevedon Local Board	G. N. Abernethy	Nov. 30
Hospital near Belfast	F. H. Sinclair	.....	Dec. 1
*County Offices, Winchester	Southampton County	Jas. Robinson	No date
*New Class-rooms, Offices, &c.	Rochester Grammar School for Girls	Mr. Nash	do
*New Tower, Blackpool	.....	Maxwell & Tuke	do.
New Theatre, Pier-head, Llandudno	Pier Company	Daniel Arkell	do.
Hotel, Wincobank, Sheffield	.....	J. Clark	do.
New Hall, Yorkshire College, Leeds	.....	A. Waterhouse & Son	do.
Road Metal	Maidstone R.S.A.	S. Stallard	do.
Three Dwelling-houses, West Cliff Estate, Whitby	.....	Henry Walker	do.
Shops and Offices, Saville-street, North Shields	Miss Baynes	Wm. Hope	do.
Infant School, Rugeley	Church Sch. Managers	J. Greensill	do.
Alterations and Additions to County Asylum, Burntwood, near Lichfield	.....	W. H. Cheadle	do.
Alterations to "Neville" Hotel, Eldon-street, South Shields	J. Daglish	B. F. Simpson	do.
*School Extension and New School	Sheffield School Board	J. B. Mitchell-Withers	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.
*Surveyor	Richmond (Surrey) T.C.	300*l.*	Oct. 26
*Building Inspector	Willesden Loc. Bd.	150*l.*	Nov. 2
*Surveyor	Friern Barnet L. B.	150*l.*	do.

Those marked with an Asterisk (*) are advertised in this Number. *Contracts, pp.* lv., vi., *and* viii. *Public Appointments, p.* xviii.

Sculpture Work, St. Albans Cathedral.—A few weeks ago two new figures were placed in the niches at the back of the altar screen at St. Albans Cathedral. The figures are full size, and that occupying the niche at the south side represents St. John the Baptist, clothed with a garment of camel's-hair, and his mantle is thrown over his shoulder. In one hand he grasps a cross, and with the other points to the central figures,—the Blessed Virgin and child. The central sculpture is the other new figure. It is a carving of the Madonna holding the infant Saviour in her arms; the child has his arms extended in the form of a cross. The figures, which were carved by Mr. Harry Hems, of Exeter, are executed in yellow Mansfield stone.

Discovery of a Saxon Cemetery in Sussex.—According to the *Brighton Herald*, an interesting archæological discovery has been made in Sussex. During some excavations near the depôt of the Artillery Volunteers at Southover, Lewes, the workmen uncovered as many as twenty-eight skeletons. They were all buried close to the surface, and within an area of about 130 ft. by 50 ft. As the skeletons comprised those of women as well as of men, it is concluded that the site was not that of a battle-field, but of a place of burial. The remains found were accompanied by a large number of weapons and ornaments, the characteristic features of which point to the fact of their being Anglo-Saxon. The skeleton of a warrior was found with a sword at his left side, a knife near the right arm, a lance-head near the skull, an arrow-head on the left side of the skull, and an umbo, or the boss of a shield, over the pelvis. In two other cases a sword was found at the left side of a skeleton. One of them is enclosed in a wooden scabbard, so complete that it bears a bronze chape, and a bronze band at the top. Another relic was the large boss of a shield, with a tin-plated stud or centre piece, and the rivets that fastened it to the wooden shield; the shield itself had been resolved into dust. Other articles have also been brought to light. The skeletons have been reinterred, but the weapons and other articles have been placed in the museum of the Sussex Archæological Society at Lewes Castle.

Hospitals in Rome.—By way of enlightening Italy on the state of her metropolitan institutions for the care and cure of the ailing and wounded, the special commissioner of the *Tribuna* continues his round of visits to the Roman hospitals. He says he describes them as they are at the moment of their being handed over to the Commendatore Silvestrelli, the "Regio Commissario," whom the Government has charged with their rehabilitation and reform. The San Giovanni Hospital for females struck him immediately on entering it by its want of a waiting-room in which patients could be received and examined before admission. The great ward, which next drew his attention, "del Salvatore" by name, is of immense size, but far too old. It was built in 1462 (thirty years before the discovery of America), is ill-ventilated, with the worst of pavements, and, incredible as it seems, without waterclosets! The patients are densely crowded in three rows of beds. The walls, merely "white"-washed, have had no cleansing or re-whitening for sixteen years! The Mazzoni ward, so named from the great surgeon who died some years ago, is much better, but too crowded; and the small rooms (*salette*) which surround it, and which Mazzoni destined for isolation, have been applied to far different uses. They, too, sorely require cleaning; while the Pacchioni ward and the others near it are paved with bricks a century old. Requisites of prime necessity are wanting; "but," says the Commissioner of the *Tribuna*, "the hospital nuns have erected in every corner a number of little altars (*altarini*), with images cushioned in candles and paper flowers, as if the hospital were a nunnery exclusively belonging to them." In the Margherita ward for chronic (female) cases, more than a hundred patients are literally "heaped" together (*ammuchiate*) in four rows of beds. The greater number of these unfortunates are decrepit, and the whole aspect of the *locale* was that of a lazzaretto improvised during an epidemic. Not a room in the hospital had its walls so painted or constructed as to admit of their being washed.—*Lancet.*

The School of Art Wood-Carving, held at the City and Guilds Institute, Exhibition-road, South Kensington, has been re-opened after the usual summer vacation, and we are asked to mention that one or two free studentships in both the day and the evening classes are vacant. These studentships are maintained by means of funds granted to the School by the City and Guilds Institute. To bring the benefits of the School within the reach of teachers a remission of half fees for the day and evening classes is made to them. Forms of application for the free studentships, and any further particulars relating to the School, may be obtained from the Manager.

Increase of Salary.—At a special meeting of the Rural Sanitary Authority of the Wakefield Union, held on the 30th ult., it was unanimously resolved that the salary of the Engineer and Waterworks Manager, Mr. Frank Massie, Assoc. M.Inst. C.E., be increased to 250*l.* per annum from the 29th ult.

A Forty-ton Steam "Titan."—The *Iron and Coal Trades' Review* for October 16 illustrates and describes a new and powerful steam crane, aptly named a "Titan," which has been made by Messrs. Ransomes & Rapier, of Ipswich, to the order of Sir Alexander Rendel, consulting engineer for the Madras Harbour works, for the purpose of lifting and transporting blocks of concrete weighing 32 tons each, used in the construction of the harbour. The machine itself weighs 152 tons, and, when loaded with 41 tons of material and water ballast, increases to an actual weight travelling on the rails of no less than 210 tons. The "Titan" has been designed by Mr. F. G. M. Stoney, M.Inst.C.E.

Bells.—Mr. G. Carr, of Smethwick, has just rehung the tenor bell (about 9 cwt.) at Pedmore Church, Hagley, and has secured the contract for rehanging and quartering the peal of six bells at Cookley Church, near Kidderminster.

The Home Iron Trade.—The English iron market has undergone very little change since last week. The Glasgow warrant market remains inactive, and there is also a weaker tendency in the Cleveland district. The hematite pig-iron trade of the north-west of England is still depressed; but slightly higher prices are being obtained. Manufactured iron is in fairly active demand. The general characteristics of the steel trade are unchanged, there being especial dulness in all descriptions of steel in the north-west. The tin-plate market continues inanimato. Shipbuilding prospects are tolerably satisfactory. Engineers are slacker. The coal trade is fairly active.—*Iron.*

Seal Engraving.—Mr. Moring, the author of the Illustrated Catalogue of Engraved Seals mentioned on page 300 *ante*, asks us to make it a little clearer that our concluding words, "we wish the designs were better," did not refer to the engravings on the seals, but to the gold work in which they were set. The previous part of the paragraph would show this. We had no intention of condemning the engraved seals, only their mounting.

Tiles.—We have received illustrated sheets of Messrs. Malkin, Edge, & Co.'s majolica glazed tiles, showing new patterns. The mottled treatment adopted in some of the plain tiles is rich and effective, and the colour good; but we cannot say much for the designs, and the employment of such things as painted landscapes on tile hearths is in the worst taste, though no doubt there will be people who will be pleased with it.

Hydraulic Power in City Warehouses.—We are informed that Mr. J. Stannah, of Southwark Bridge-road, has supplied all the hydraulic machinery at Messrs. Frankau's new warehouse in Queen Victoria-street. The patent variable power hydraulic apparatus has been fitted to a crane for Sir Richard Dickeson, in Mansell-street, by the same firm of engineers, for working from the London Hydraulic Power Company's pressure mains.

The Zone Tariff in Russia.—It is stated in St. Petersburg that the Minister of Finance has a scheme under consideration for the introduction of a kind of zone tariff on the Russian railways.

MEETINGS.

Monday, October 26.

Surveyors' Institution.—Ordinary General Meeting for reading the Balloting List for the Election of New Members. 8 p.m.

Tuesday, October 27.

Sanitary Institute (Lectures for Sanitary Officers).—Mr. J. Wright Clarke on "Details of Plumbers' Work." 8 p.m.

Wednesday, October 28.

Institution of Mechanical Engineers. — Ordinary General Meeting. Mr. Samuel Boswell on "Some Details in the Construction of Modern Lancashire Boilers." 7.30 p.m.

London Society for the Extension of University Teaching (Chelsea Centre).—Mr. A. H. Fison, D.Sc., on "Electricity and its Modern Applications." IV. 8.15 p.m.

Thursday, October 29.

Institution of Mechanical Engineers. — Ordinary General Meeting (continued). Professor W. C. Roberts-Austen will read a paper, entitled "First Report to the Alloys Research Committee." 7.30 p.m.

Friday, October 30.

Architectural Association.—Mr. W. H. Bidlake on "Pitfalls on Commencing Practice." 7.30 p.m.

Sanitary Institute (Lectures for Sanitary Officers).—Mr. Charles Jones on "Scavenging, Disposal of Refuse and Sewage." 8 p.m.

RECENT PATENTS:

ABSTRACTS OF SPECIFICATIONS.

15,210.—GRATES: *J. Grundy.*—The back of the grate is, preferably, [made in one piece, with sides and smoke-nozzle. The smoke-flue is led up inside the chimney for some distance, and for that distance the chimney being cut off from the flue proper, and being also placed in communication with the open air and the room to be warmed, serves as a warming-chamber. The cold-air current strikes first upon the face of the fire-grate, which is furnished with gills, flowing thence into the warming-chamber. Gratings and dampers are used to control the air-channels.

17,534.—GLASS-CUTTING: *E. Reynolds.*—In order to cut "quarries" or "lines" for lead-glazing, an apparatus comprising improved means whereby the pieces of glass are severed from a range without the necessity of lifting it, and with adjustable guides or stops, is devised.

17,833.—SCAFFOLD-FASTENINGS: *J. Varley.*—According to this invention, a bifurcated bracket is employed which acts as a lever, having for its fulcrum a cross shaft maintained by the chain, the relative position of which, together with the position of its arms and spurred end, is such that by the cross or horizontal timbers being placed in contact with these arms the weight tends to bind and secure the whole firmly in position.

18,725.—FLUSH CISTERNS: *E. Ward.*—The lower part of the cistern which is the subject of this patent has a well centrally arranged, into which the down flow-pipe is inserted, this having an upper portion within the syphon bell to just above the fixed water level, governed by the float-ball and inlet valve. Between the upper part of the down flow-pipe, and the bell is an intermediate pipe, provided at the lower part, with a ring suction valve, which covers apertures in a kind of box when let down in place, but which, when lifted, permits of a sufficient quantity of water to leave the bottom of the cistern, and break the syphon for positive flush.

18,768.—VENTILATORS: *A. C. Smith.*—The ventilator and chimney-top here referred to is made of bent guard-plates, with edges turned up or down, as desired, which deflect the air.

10,648.—SASH BALANCES: *W. E. Gedge.*—This patent relates to the class of sash balances where a spring is employed, which operates a pinion engaging a rack. The chief improvement is a connexion of the pinion and rack, which, while holding the two together, permits the travel of them both, ensuring easy and efficient working.

NEW APPLICATIONS FOR PATENTS.

October 5.—16,833, A. Dougill, Cranes.—16,893, T. Rockliffe, Window-fastenings.—16,894, E. Moloney, Drainage of Damp Basements of Houses.—16,899, E. Preston and F. Ham, Lavatories and Water-closets.—16,929, J. Lewis, Metal Window Sashes or Frames.

October 6.—16,935, J. Joensen, Double Plane-irons.—16,939, H. Allison, Engineers' Slide-rule.—16,977, H. Whincop, Lightning-rod Staples.—16,984, R. Robisher and E. Greenhalgh, Raising and Lowering Windows.—17,006, J. Lange, Sanding Bricks, &c.

October 7.—17,018, A. Tyler and J. de Vesian, Wood-carving Machines.—17,025, T. Ledward, Bench Vices, &c.—17,031, M. Laidton, Sockets of Window Fittings.—17,056, W. Golden, Door and Gate Fastener.

October 8.—17,100, W. Douslin, Mortice Locks.—17,105, J. Walley, Fastening of Stable Doors.—17,135, A. Hall, Concrete Slabs or Blocks for Paving, &c.

October 9.—17,189, T. Greenwood, Indicators for Ventilators.—17,214, A. Johnson, Preventing Windows from Rattling.—17,219, S. Page, Bakers' Ovens and their Flues.—17,238, B. Baker, Door Fastening.

October 10.—17,269, M. Adams, Syphon Cisterns.—17,287, W. Deeley, Syphon Flushing Cisterns and Water-waste Preventers.—17,305, J. Chapman, Automatic Flushing Syphon.

PROVISIONAL SPECIFICATIONS ACCEPTED.

13,279, F. Feltham, Level to be used in Building Construction and other Works.—14,058, A. Heighton, Door-fastenings.—14,139, T. & A. Benson, Water-closets.—14,182, A. Fowler, Automatic Tank Water-closet.—14,184, J. Shaw, Fire-places.—14,202, H. Carter, Syphon Cistern.—14,394, J. Russell, Sewer Gas.—14,476, J. Trimming, Combination Instrument for the Use of Architects and Surveyors, called the "Architect's Desideratum."—14,591, J. Graham, Clamp for Mitre-work.—14,773, S. Jennings and J. Morley, Water-closets.—14,776, L. Cannis, Stoves.—15,042, W. Llewellyn and T. Dillon, Traps for Sewers, &c.—15,131, O. Brooke, Arrangements and Apparatus for Supplying Disinfectants to Urinals.—15,171, G. Smith, Water-waste Preventer Syphon Cistern.—15,173, J. Livesley, Wood Covering for Wood-cased Stock and Plate Locks.—15,195, C. Tomkins and J. Kinder, Buildings, &c.—15,281, W. Thomas, Decoration of Artificial Stone and Pavements.—15,374, J. Winterflood, Ventilating and Chimney Cowls.—15,528, A. Fowler, Water-closets.—15,632, M. Bithorn, Sliding Double-step Ladder.—15,681, S. Ward, Boring Wells and the like.—15,724, A. Clay, Fastenings suitable for Doors.—15,814, J. Timmis, Construction of Metal Floors and Roofs.—15,823, D. Morison, Flanges for Pipes.—15,836, D. Cameron, Suspended Combination Flush-out Water-closet, Basin, and Trap.—16,058, J. Martin, Treatment of Lead Pigments.—16,153, W. McCormick, an Oscillating Plunger for Starting the Discharge of Syphon-flushing Cisterns.—16,201, H. Ratcliffe, Fancy or Ornamental Bricks, Tiles, or Slabs.—16,309, F. Weldon, Device for Connecting the Parts of Scaffolding, &c.—16,518, W. Thompson, Blocks or Stones for Use in the Sinking of Wells or Shafts, and in the Process of Placing the same in Position.

COMPLETE SPECIFICATIONS ACCEPTED.

Open to Opposition for Two Months.

17,902, J. Leather, Ventilating, and in Apparatus therefor.—18,643, S. Bourne and G. Leonard, Fire-places or Stoves.—18,931, W. Stevenson, Plastic Brickmaking Machines.—15,021, E. Winian, Stoves.

LECTERN, BROOKING CHURCH, TOTNESS.—An oak lectern has just been presented to Brooking Church, Totnes. It was designed by Mr. Edmund Sedding, of Plymouth, and executed by Rashleigh, Pinwill, & Co., of the same town.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

OCTOBER 8.—By *G. B. Smallpeice* (at Woking): Two villa residences, Goldsworth-rd., Woking, f., 600*l.*; Two freehold cottages, Westfield, r. 16*l.* 12s., 250*l.*

OCTOBER 10.—By *Humbert, Son, & Flint* (at Carmarthen): Freehold farms and a water corn mill, near Carmarthen, 267a. 1r. 8p., r. 291*l.* 4s., 7,250*l.*

OCTOBER 12.—By *Fuller, Moon, & Fuller*: Freehold residence, Denmark-road, Carshalton, 950*l.*

OCTOBER 13.—By *Boyce & Evens*: 2 to 12 even, and 26 and 28, Alma-st., Hoxton, u.t. 43 yrs., g.r. 40*l.*, r. 180*l.*, 3,005*l.*; 30, Alma-st., u.t. 43 yrs., g.r. 5*l.*, r. 38*l.*, 390*l.*; 10, 12, and 14, Huntingdon-st., u.t. 78 yrs., g.r. 20*l.* 5s., r. 135*l.*, 1,345*l.*; 95 to 105 odd, Mildmay-rd., Stoke Newington, u.t. 58 yrs., g.r. 34*l.* 10s., r. 240*l.*, 2,170*l.*

OCTOBER 15.—By *Jenkins & Son*: 98, Wickham-rd, Brockley, u.t. 86 yrs., g.r. 10*l.*, 735*l.*; 72, Foxberry-rd., u.t. 80 yrs., g.r. 5*l.*, r. 26*l.*, 205*l.*; 2, Casella-rd., New Cross, u.t. 65 yrs., g.r. 5*l.*, r. 34*l.*, 330*l.*; 19, Egmont-st., u.t. 67 yrs., g.r. 4*l.* 10s., 270*l.*—By *C. W. Millar*: A moiety of Nos. 141 and 142, New Bond-st., Corporation Lease, r. 465*l.*, 7,900*l.*—By *Newbon & Co.*: 6, Thornhill-grove, Barnsbury, u.t. 53 yrs., g.r. 5*l.*, r. 32*l.*, 300*l.*; 79 and 83, Tufnell-park-rd., Holloway, u.t. 73 yrs., g.r. 17*l.*, 970*l.*; 107 and 117, Isledon-rd., u.t. 68 yrs., g.r. 15*l.* 10s., r. 72*l.*, 580*l.*—By *Farebrother, Ellis, & Co.*: "Downshire House," and 28a. 3r. 10p., Roehampton, f., 20,000*l.*; An enclosure of land, 6a. 3r. 25p., f. The freehold cottage is subject to a life interest, 5,000*l.*—By *M. Liell*: 7, Leighton-villas, Leyton, u.t. 77 yrs., g.r. 5*l.*, 200*l.*; 2, Drayton-ter., Leytonstone, u.t. 86 yrs., g.r. 5*l.*, r. 30*l.*, 290*l.*—By *W. Hall*: 256, Commercial-rd., Peckham, f., area 5,000 ft., 830*l.*; 7, North-ter., Camberwell, and Stabling, u.t. 29 yrs., g.r. 25*l.*, r. 90*l.*, 510*l.*; 186, Wornington-rd., Notting-hill, u.t. 85 yrs., g.r. 7*l.* 10s., 285*l.*; 8, 10, and 12, Prince's-rd., Ealing, u.t. 76 yrs., g.r. 12*l.*, 300*l.*; No. 612, Old Kent-rd., u.t. 20 yrs., g.r. 6*l.*, r. 46*l.*, 220*l.*; 17, Langham-rd., West Green, u.t. 86 yrs., g.r. 6*l.*, 275*l.*; 52, Hazelwood-cres., Westbourne-park, u.t. 75 yrs., g.r. 7*l.*, 250*l.*—By *W. T. Marsh*: 79, Sutherland-av., Maida Vale, u.t. 72 yrs., g.r. 12*l.*, r. 78*l.*, 750*l.*; 19 and 53, Maryland-rd., Harrow-rd., u.t. 72 yrs., g.r. 17*l.* 10s., r. 97*l.*, 945*l.*

OCTOBER 16.—By *W. H. Daw*: No. 303, Seven Sisters'-rd., u.t. 70 yrs., g.r. 14*l.*, 605*l.*; "Hazeldene," Thurlow-park-rd., Dulwich, sold before auction.—By *Foster & Cranfield*: 18, Osnaburgh-st., Portland-rd., u.t. 23 yrs., g.r. 21*l.*, 2,160*l.*

[*Contractions used in these lists.*—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.]

PRICES CURRENT OF MATERIALS.

TIMBER.		
Greenheart, B.G. ton	9/0/0	0/0/0
Teak, E.I... load	8/10/0	14/0/0
Sequoia, U.S.ft.cu.	2/3	3/0
Ash, Canada load	2/5/0	4/0/0
Birch, do.	2/10/0	4/5/0
Elm, do.	3/5/0	4/15/0
Fir, Dantsic, &c.	2/0/0	3/10/0
Oak, do.	2/10/0	4/10/0
Canada.....	4/17/6	6/10/0
Pine, Canada red	2/10/0	3/10/0
Do, yellow	2/0/0	5/0/0
Lath, D'ntsic, fath	5/0/0	6/0/0
St. Petersburg	5/0/0	7/0/0
Deals, Finland, 2nd & 1st std 100	8/0/0	10/0/0
Do, 4th & 3rd..	7/10/0	8/10/0
Do. Riga	6/10/0	8/0/0
St. Petersburg, 1st yellow ..	10/10/0	14/10/0
Do. 2nd yellow	8/10/0	9/10/0
Do. white	7/0/0	10/10/0
Swedish	7/10/0	15/10/0
White Sea	8/10/0	17/10/0
Canada, Pine 1st	13/0/0	25/0/0
Do. do. 2nd....	9/0/0	16/10/0
Do. do. 3rd, &c.	6/10/0	10/10/0
Do. Spruce. 1st	8/10/0	10/10/0
Do. do. 3rd & 2nd.....	6/0/0	7/15/0
New Brunswick	5/10/0	7/10/0
Battens, all kinds	3/10/0	15/10/0
Flooring Boards, sq., 1 in. prep. 1st	0/8/0	6/14/0
Do. 2nd.....	0/7/6	0/11/0
Other qualities	0/5/0	0/8/0
Cedar, Cuba ..ft.	/4	/4½
Honduras, &c.	/4	/4½
Mahogany, Cuba.	/4½	/0
St. Domingo, cargo av	/4½	/6½
Mexican do. do	/4	/5
Tobasco do. do	/5½	/7
Honduras do..	/5½	/6½
Box, Turkey ton	4/0/0	13/0/0
Rose, Rio.....	10/0/0	20/0/0
Bahia	9/0/0	18/0/0
Satin, St. Domingo ....ft.	0/0/9	0/1/0

TIMBER (*continued*).		
Satin, Porto Rico	0/0/10	0/1/6
Walnut, Italian..	0/0/3½	0/0/7
METALS.		
IRON—Pig, in Scotland.....ton	47/1/0	47/3/0
Bar, Welsh, in London.....	6/0/0	6/2/6
Do. do. at works in Wales	5/10/0	5/12/6
Do. Staffordshire, in London	6/10/0	6/15/0
COPPER—British, cake and ingot	53/0/0	55/0/0
Best selected ..	54/0/0	54/10/0
Sheets, strong..	63/10/0	64/0/0
Chili, bars	50/0/0	50/7/6
YELLOW METAL lb.	0/0/5¾	0/0/6
LEAD—Pig, Spanish....ton	12/0/0	0/0/0
English, com, brands	12/2/6	12/5/0
Sheet, English, 3 lbs. per sq. ft. and upwards ..	14/5/0	0/0/0
Pipe	14/15/0	0/0/0
ZINC—English sheet .....ton	27/10/0	0/0/0
Vieille Montagne.....	28/0/0	0/0/0
TIN—Straits	91/12/6	92/0/0
Australian	91/12/6	92/0/0
English Ingots	94/10/0	95/0/0
OILS.		
Linseed .....ton	19/17/6	20/5/0
Cocoanut, Cochin	29/0/0	29/10/0
Do. Ceylon	24/15/0	25/0/0
Palm, Lagos	25/0/0	0/0/0
Rapeseed, English pale	30/10/0	0/0/0
Do. brown	28/15/0	29/0/0
Cottonseed ref...	19/15/0	0/0/0
Oleine	0/0/0	0/0/0
Lubricating, U.S.	4/10/0	5/10/0
Do. refined	6/0/0	11/0/0
TAR—Stockholm barrel	0/19/6	0/0/0
Archangel	0/12/0	0/12/6

TENDERS.

[Communications for insertion under this heading must reach us *not later than* 12 *noon on Thursdays.*]

ALBRIGHTON.—For erecting a residence at Albrighton (exclusive of stabling and other out offices), for Mr. Thos. Russell. Messrs. J. R. Veall & Son, architects, Wolverhampton:—

H. Gough	£2,325	0	
H. Willcock	2,043	0	
H. Lovatt, Wolverhampton (accepted)	£2,040	0	
Bradney & Co.	2,027	6	

BECKENHAM.—For providing and fixing gymnastic apparatus and seats at the Croydon-road and Alexandra Recreation-grounds, Beckenham, for the Beckenham Local Board. Mr. Geo. B. Carlton, C.E., Engineer and Surveyor, Beckenham:—

Mid Kent Building and Contracting Works, Ltd.	£207	0	0
E. C. Christmas	185	0	0
Piggott Bros. (gymnastic apparatus only)	127	10	0
Geo. Spencer („ „ „)	120	0	0
T. W. Jones (accepted)	144	15	0

BRISTOL.—For alterations and additions to tannery, Stillhouse-lane, Bedminster, for Messrs. John Cox & Co.'s successors. Mr. Herbert J. Jones, architect, Bristol:—

A. J. Beavan	£2,250	W. Cowlin & Son	£1,943
E. T. Hatherly	2,097	J. Perrott	1,940
G. Humphreys	1,999	R. Wilkins & Sons	1,885
Eastabrook & Sons	1,970	H. J. Rossiter	1,800
W. Church	1,947	G. H. Wilkins (accepted)	1,790

[All of Bristol.]

HENDON.—For kerbing, tar-paving, and other works, in Finchley-lane, Church-end, Parson-street, and Mill-hill-road, for the Hendon Local Board. Mr. S. S. Grimley, Engineer and Surveyor:—

Approximate Estimate for the Work, £1,000.

Mowlem & Co.	10 per cent. above schedule of prices.				
J. Meston	10	„	„	„	„
Nowell & Robson	8	„	„	„	„
J. Allen	5	„	„	„	„
W. Pavey*	5	„	below	„	„
Constable & Co.	Informal.				

* Accepted.

LONDON.—For the erection of a municipal lodging-house in Parker-street, Drury-lane, for the London County Council. Messrs. Gibson & Russell, architects, 27A, Old Bond-street, W.:—

Frampton	£18,500	Killby & Gayford	£15,674
Lawrance & Sons	16,597	Marriage	15,560
Higgs & Co.	16,575	Mark Gentry	15,200
Holliday & Greenwood	16,375	Allen & Sons	15,100
Scharien & Co.	16,226	Reed, Blight, & Co.	15,043
B. E. Nightingale	16,079	Wall	14,850
Patman & Fotheringham	15,989	Perry & Co.	14,746
Co-operative Builders, Limited	15,722	Holloway Bros.	14,300
Kellett	15,685	Godfrey & Son	14,297
		Chinchin	13,988

LONDON.—For rebuilding the "Old Leather Bottle" public-house, Leather-lane, W.C. (and house adjoining in Charles-street, W.C.), for Mr. J. Lloyd. Mr. John T. Alexander, architect, 40, Great James-street, Bedford-row, W.C.:—

	Public-house.	House.	Total.
Balaam Bros.	£3,300	£1,550	£4 850
T. L. Green	2,959	1,628	4,587
R. Aviss & Co.	2,875	1,547	4,422
John Ansley	2,915	1,399	4,314
Leslie & Co.	2,749	1,530	4,279
Spencer & Co.	2,780	1,450	4 230
G. E. Todd	2,779	1,439	4 218
Leeks & Hooker	2,700	1,475	4,175
Edwards & Medway	2,800	1,368	4,168
Godson & Sons*	2,624	1,366	3,990

* Accepted.

LONDON.—For rebuilding the "Old Whitmore's Head" public-house (and two shops adjoining), St. John's-road, Hoxton, N., for Mr. A. G. Stock. Mr. John T. Alexander, architect, 40, Great James-street, Bedford-row, W.C.:—

	Public-house.	Shops.	Total.
Paramor & Sons	£5,610	£2,140	£7,750
T. L. Green	5,389	2,157	7,546
C. Ansell	5,246	2,068	7,314
W. Smith	5,217	1,996	7,213
Mattock Bros.	4,995	1,933	6,928
Clarke Bros	4,925	1,950	6,875
Edwards & Medway	4,620	1,840	6,460
Walker Bros.	4,619	1,643	6,262
Turtle & Appleton	4,444	1,797	6,241
Harrison Fagg	4,314	1,773	6,087

LONDON.—For pulling-down and re-building No. 62, Farringdon-street, E.C., for Mrs. Homewood. Messrs. Romaine-Walker & Tanner, architects. Quantities supplied by Messrs. Pryce Cuxson & Leigh:—

	Main Building.	Half Party-wall.	Beech Shop-front.	Mahogany Shop-front.
Balaam Bros.	£1,600	£54	£41	£50
Holloway Bros.	1,550	54	24	38
Scrivener & Co.	1,504	51	38	48
B. E. Nightingale	1,493	54	35	47
Burman & Sons*	1,430	56	32	36

* Accepted.

LONDON.—For rebuilding the "Abbey" tavern, Kentish Town-road, N.W., for Mr. Cowling. Mr. John T. Alexander, architect, 40, Great James-street, Bedford-row, W.C.:—

Woodroe & Pitcher..	£6,320	10	0	Walker Bros.	£5,970	0 0
Mattock Bros.	6,255	0	0	Gould & Brand	5,831	0 0
Patman & Fotheringham	6,155	0	0	Harrison Fagg	5,769	0 0
Rowe Bros.	5,980	0	0	Edwards & Medway	5,644	0 0
				S. R. Lamble*	5,557	0 0

* Accepted.

LONDON.—For alterations at the "Three Crowns" public-house, High-street, Stoke Newington, N., for Mr. W. G. Coxen. Mr. John T. Alexander, architect, 40, Great James-street, Bedford-row, W.C.:—

J. Hicks	£315	S. Goodall (accepted)	£281
Edwards & Medway	298	Walker Bros.	277
Harrison Fagg	295	Green & Smith	238

LONDON.—For the erection of three shops in Wellington-street, Woolwich, for Messrs. Lloyd & Son. Mr. Henry H. Church, Woolwich, architect. Quantities by Mr. Wm. Henry Strudwick:—

Coombs	£3,258	Battley	£3,589
Allen & Sons	2,950	Holloway	2,587
Multon & Wallis	2,840	Wallis & Sons	2,544
Hart	2,649	Chapman (accepted)	2,495

LONDON.—For alterations and repairs to shops, No. 15 and 16, Plumstead-road, Plumstead. Mr. Henry H. Church, Woolwich, architect:—

Hutton	£478	Coombs	£256
How	263		

LONDON.—For the erection of additional stables, Canal-road Mile End, for the Vestry of Mile End Old Town:—

S. W. Hawkings	£621	J. R. Hunt	£665
T. White & Son	649	G. Limn & Sons, Millwall*	565
A. Hood	798		

* Accepted.

LONDON.—For pulling down and rebuilding the "Denmark Arms" public-house, Barking-road, East Ham, E., for Messrs. Taylor, Walker, & Co. Mr. Fred. A. Ashton, architect, Stratford, E.:—

Hearle & Farrow	£3,495	North Bros.	£3,320
W. Watson	3,456	Coulsell Bros.	3,192
F. Voller	3,370	J. Johnston*	3,039
J. Morter	3,345	W. Shurmur	2,997
J. & H. Cocks	3,335		

* Accepted.

LONDON.—Accepted for additions and alterations to No. 82, Upper-street, Islington, N., for Mr. Thomas Harrold. Mr. Edmund J. Harrison, architect, 72, Chancery-lane, W.C.:—

Mattock Bros. (revised estimate) £851 1 2

[six tenders received.]

LONDON.—For painting and decorating the Town-hall, Poplar Messrs. Clarkson, architects, 46, High-street, Poplar:—

James Edmunds (accepted) £307 0 0

LONDON.—For the erection of pantechnicon warehouse and stables, Market-road, Caledonian-road, N., for Mr. John Southern Mr. R. Owen Allsop, architect. Quantities supplied:—

	Whole building.	Without first floor stables.
E. J. Chant	£1,675 0 0	£1,134 0 0
N. Lidstone	1,610 0 0	1,201 0 0
Gould & Brand	1,596 0 0	1,149 0 0
Royal & Co.	1,585 0 0	1,093 0 0
Mattock Bros.	1,533 0 0	1,161 0 0
G. H. & A. Bywaters	1,494 0 0*	1,043 0 0

* Accepted.

LONDON.—For alterations at the "Beaconsfield" public-house, Green-lanes, N., for Mr. David Oliver. Mr. John E. Pinder, surveyor, Bridge House, South Tottenham:—

F. Voller	£648	G. Todd	£535
H. Knight & Son	570	Wilkinson	531

LONDON.—For proposed alterations to the "White Bear" public-house, St. John-street, Clerkenwell, for Mr. Gorey. Mr. A. B. Robb, architect:—

Spencer & Co.	£385	G. S. Archer	£380

LONDON.—For alterations, &c., at the "King's Head" Tavern, Upper-street, Islington. Mr. H. S. Tyack, architect :—

Ansley	£2,480	Voller	£2,040
Kelleway	2,447	Hayworth	2,010
Dearing & Son	2,437	Goodall	1,994
Burman & Son	2,400		

LONDON.—For rebuilding No. 127, Lower-marsh, for Mr. Crane Mr. W. M. Brutton, architect, 171, Queen Victoria-street, E.C. :—
R. C. Scutt (accepted) £700 0 0

LONDON.—For alterations to the "Three Tuns," Blackheath, for Mr. G. T. Riddall. Mr. W. M. Brutton, architect :—

H. Bridle	£735 0 0	E. J. Ford	£628 0 0
G. W. Ford	680 0 0	J. Mead*	609 0 0
W. L. Simpson	635 18 0	* Accepted.	

LONDON.—For alterations to the "Albion," Caledonian-road, N., for the New London Brewery Company, Limited. Mr. W. M. Brutton, architect :—

G. W. Ford	£400	Romaine & Co.	£390
Edwards & Medway	390	J. Arnold	389
G. S. Archer	390		

LONDON.—For alterations to the "Red Lion," Duke-street, Manchester-square, W.C., for Mr. M. L. Carpenter. Mr. W. M. Brutton, architect :—

G. S. Archer	£330	Edwards & Medway	£292
H. Ashwell	305	Romaine & Co.*	276
G. W. Ford	295	* Accepted.	

LONDON.—For alterations to the "Two Brewers," High-street, Vauxhall, for the New London Brewery Company, Limited. Mr. W. M. Brutton, architect :—

Romaine & Co.	£476	G. W. Ford	£392
Gregory & Co.	419	G. S. Archer	390
Edwards & Medway	410		

RUNCORN (Cheshire).—For the erection of new chancel and vestries at St. Michael's Church, Runcorn. Quantities supplied. Mr. T. D. Barry, architect, Liverpool :—

Miller	£1,350 0	Hughes & Stirling*	£1,124 10
Brown & Backhouse	1,260 0	McDermott	1,094 0
Clark	1,160 0	Laurie & Brinsley	1,089 0
[All of Liverpool.]		* Accepted.	

SHEFFIELD.—For erecting an hotel at Treeton, near Rotherham, for Mr. W. Foers. Mr. Edward Winder, jun., architect and surveyor, Sheffield :—

G. & W. Oxley	£1,050 0	Fred. Foers, Treeton, near Rotherham*	£959 14
Henry Sykes	1,020 0	* Accepted.	
Charles Green	992 0		

WAKEFIELD.—Accepted for the East Ardsley drainage works, for the Wakefield Union Rural Sanitary Authority. Mr. Frank Massie, engineer :—
Contract No 1.
W. Doleman, Dewsbury (revised tender) £1,297 9 0
Contract No. 2.
Geo. Wilson, Wakefield 268 18

WAKEFIELD.—Accepted for the Shillington Waterworks, for the Wakefield Union Rural Sanitary Authority. Mr. Frank Massie, engineer :—
Contract No. 1.
W. Doleman, Dewsbury £272 19 5

WOLVERHAMPTON.—For erecting a villa residence at Penn, near Wolverhampton, for Mr A. E. Price. Mr. J. Lavender, architect, Wolverhampton :—

J. A. Randall	£783	H. Gough	£685
B. Guest	765	G. Cave (accepted)	658
Bradney & Co.	700	[All of Wolverhampton.]	

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TO CORRESPONDENTS.

T. W. C.—H. D. (the subject, though important, is hardly within our province).—C. H.—C. & Co.—E. S.—J. J. (we cannot print letters sent without name or address).—H. & Co. (thanks ; not required).—W. & H.—T. G. S. (too late).

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Advertisements for the current week's issue must reach the Office before THREE o'clock p.m. on THURSDAY, but those intended for the front Page should be in by TWELVE noon on WEDNESDAY.

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CHURCH BENCHES & PULPITS

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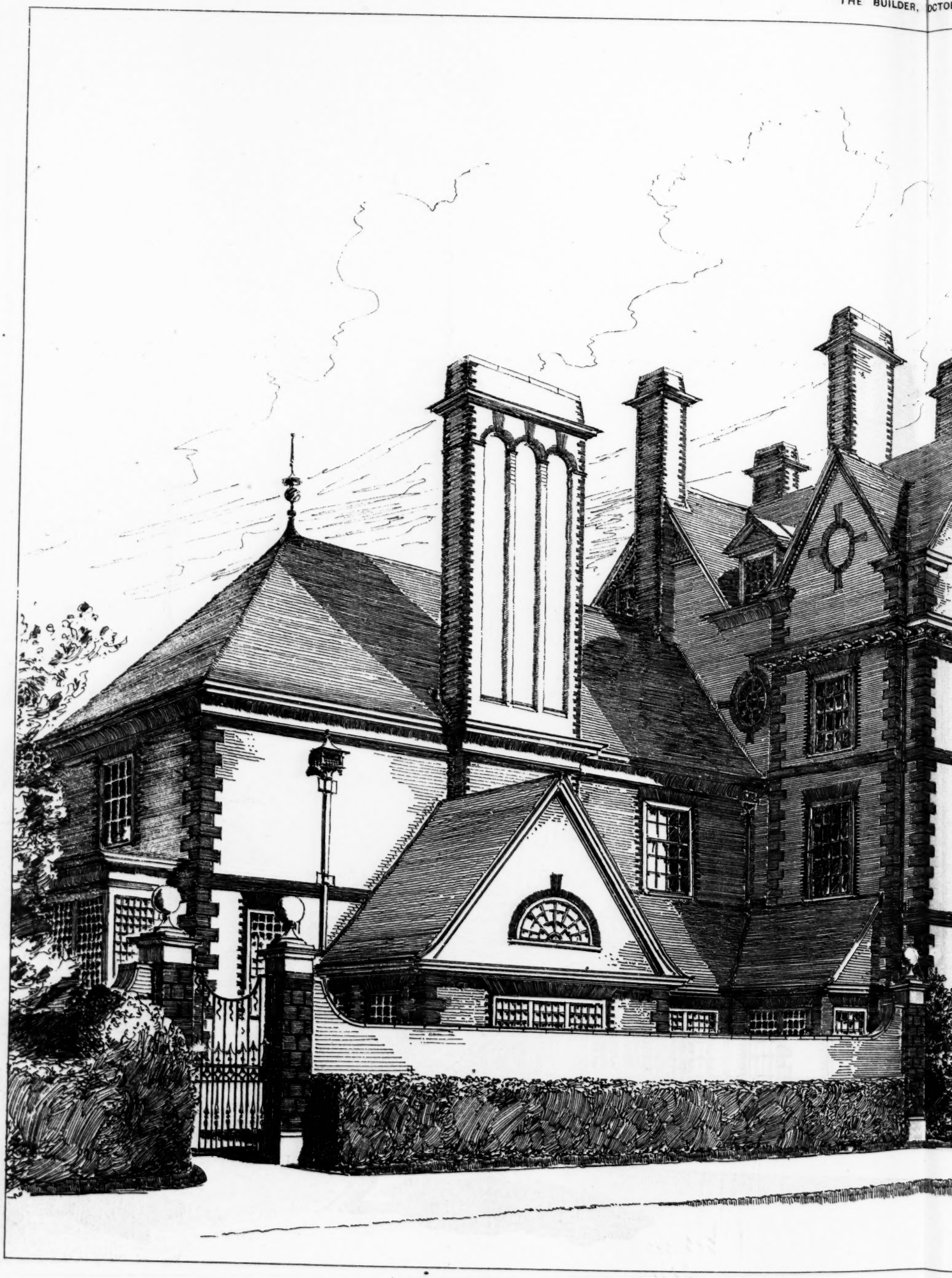

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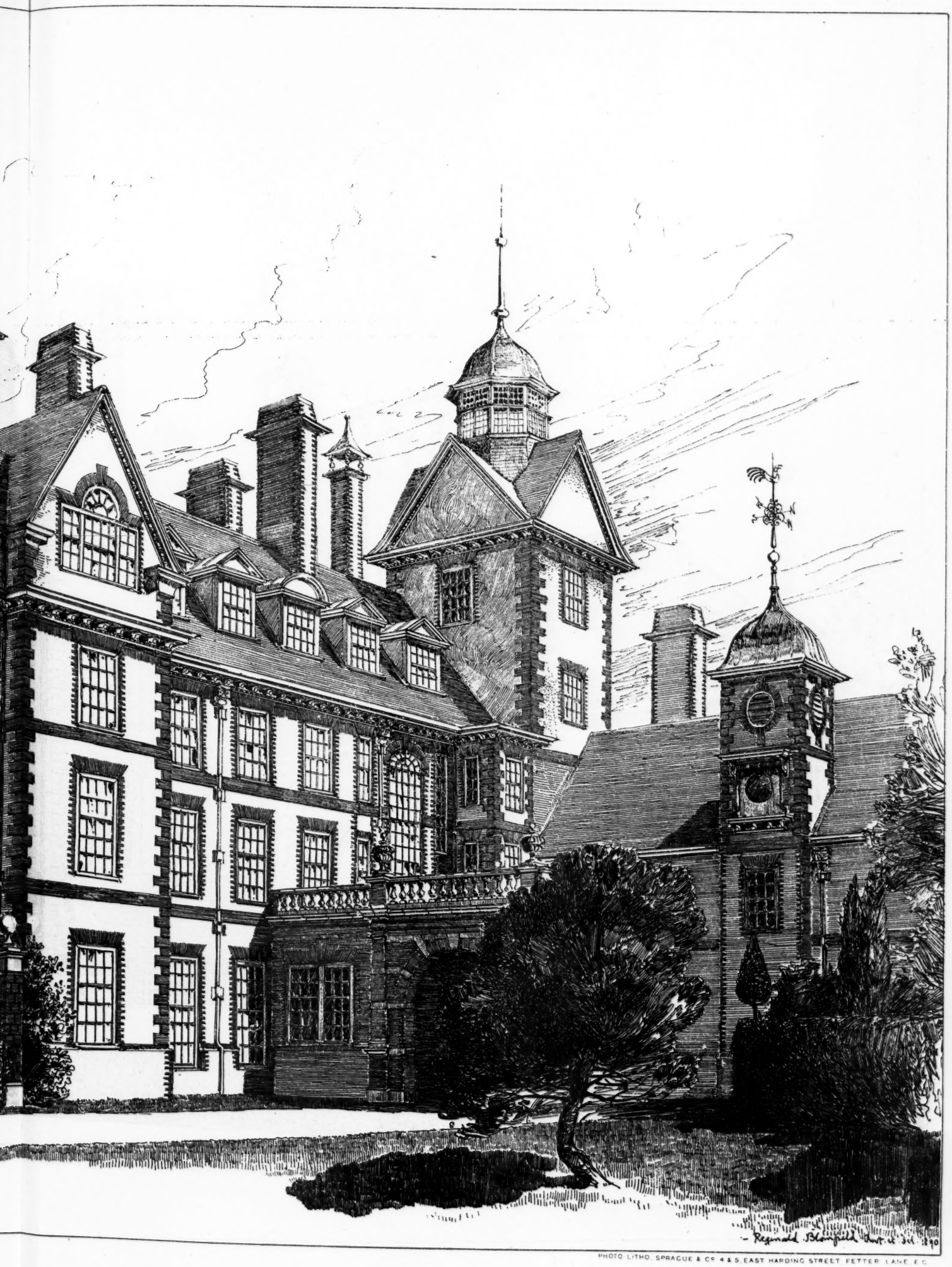

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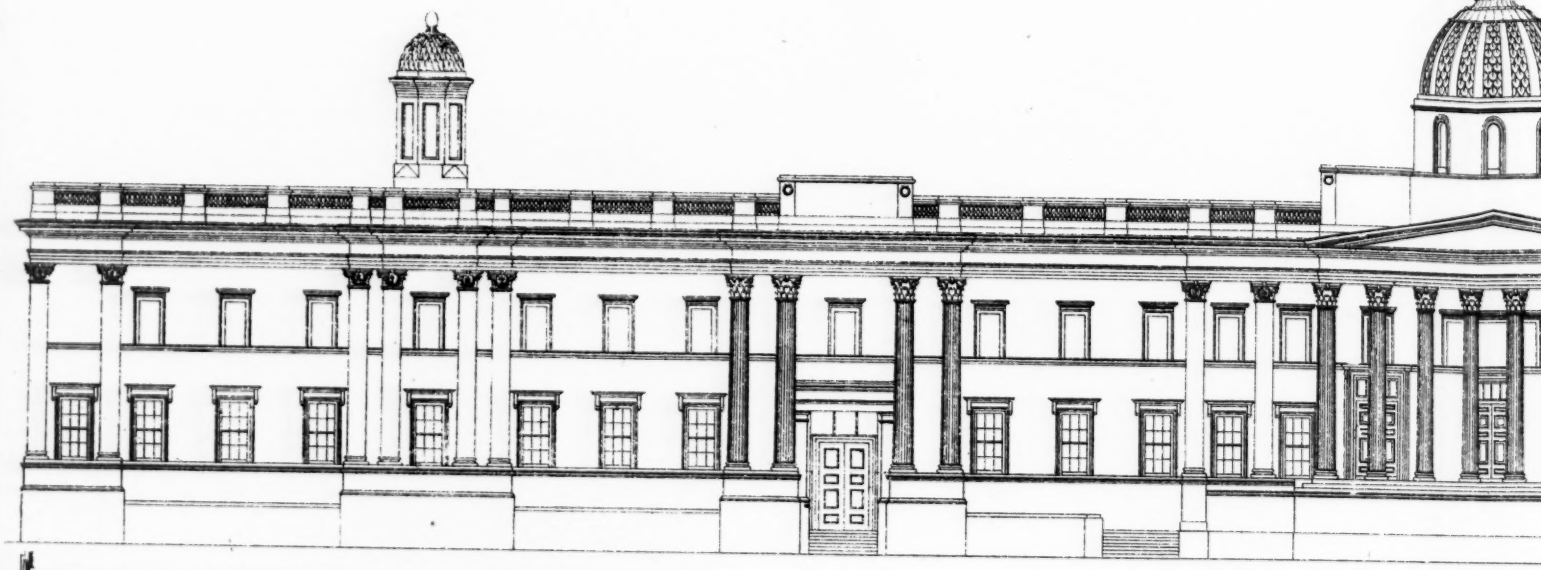

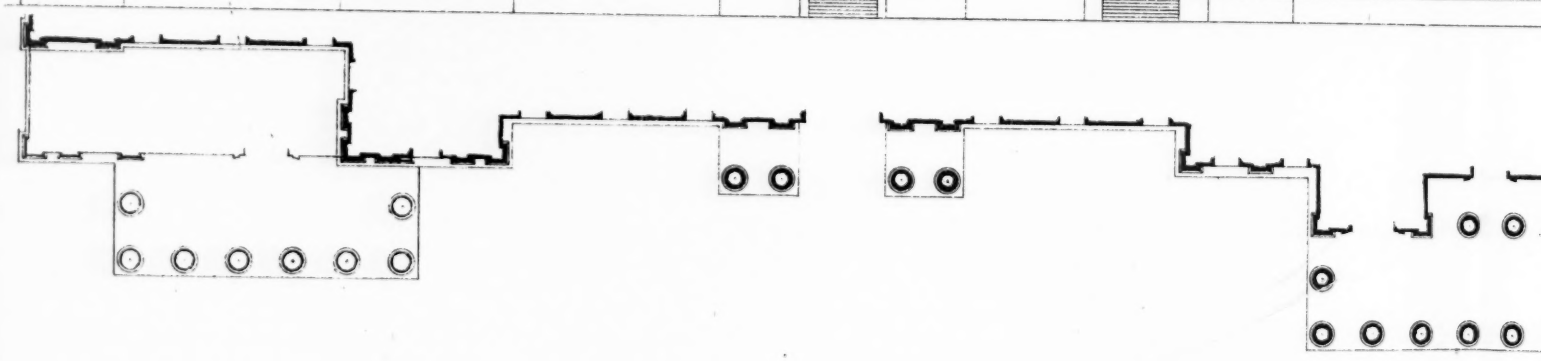

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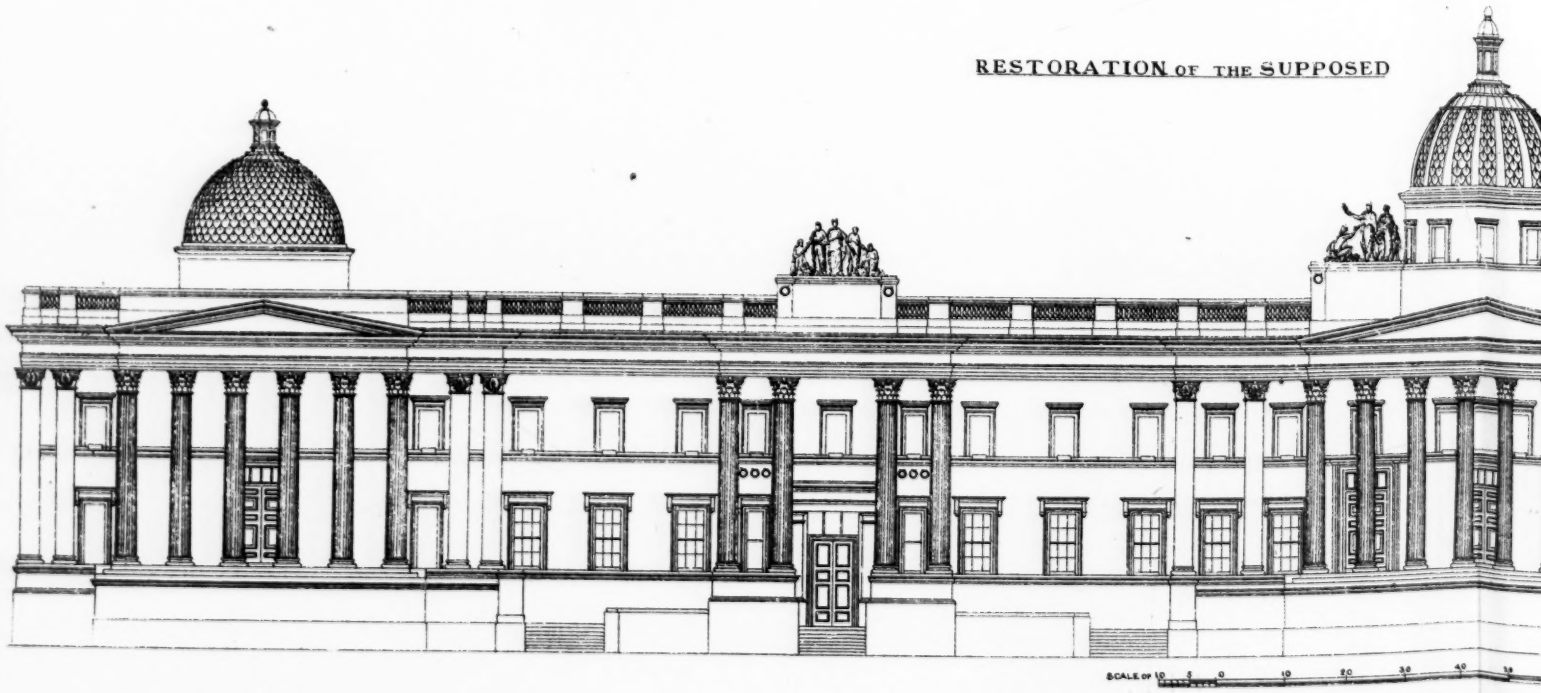

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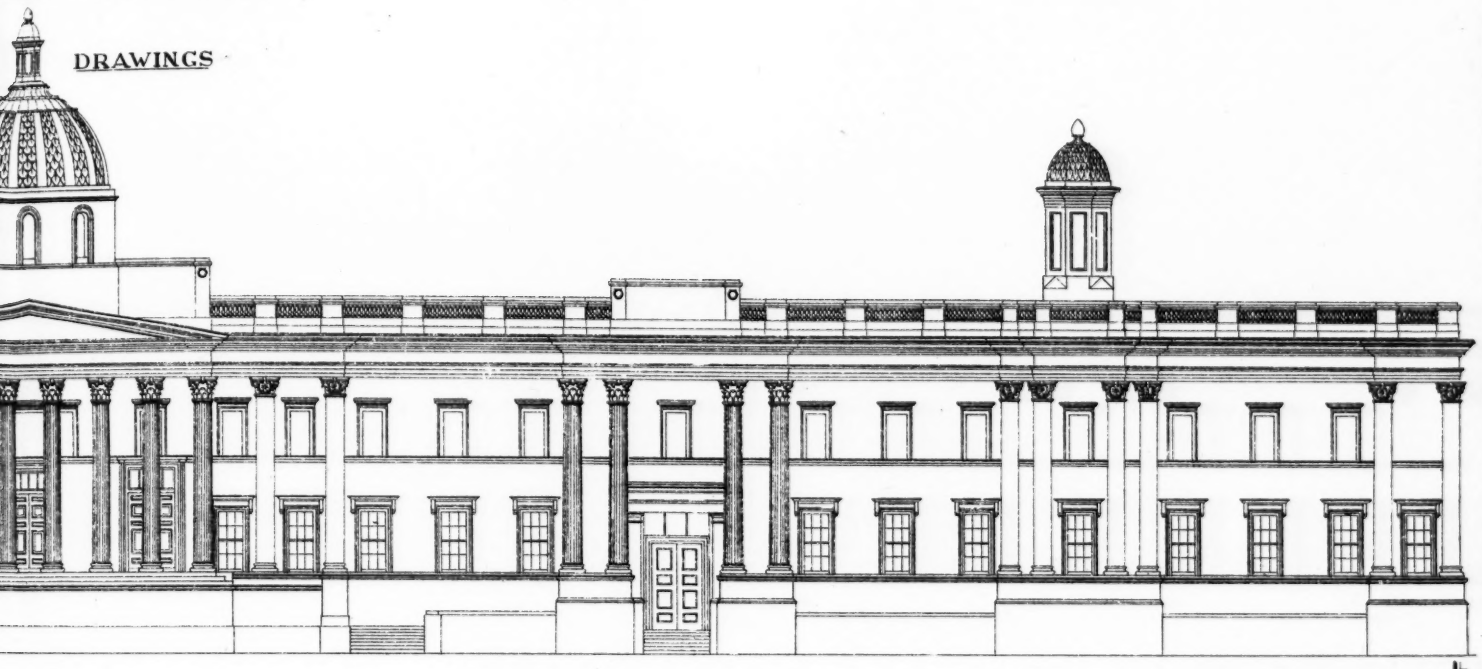

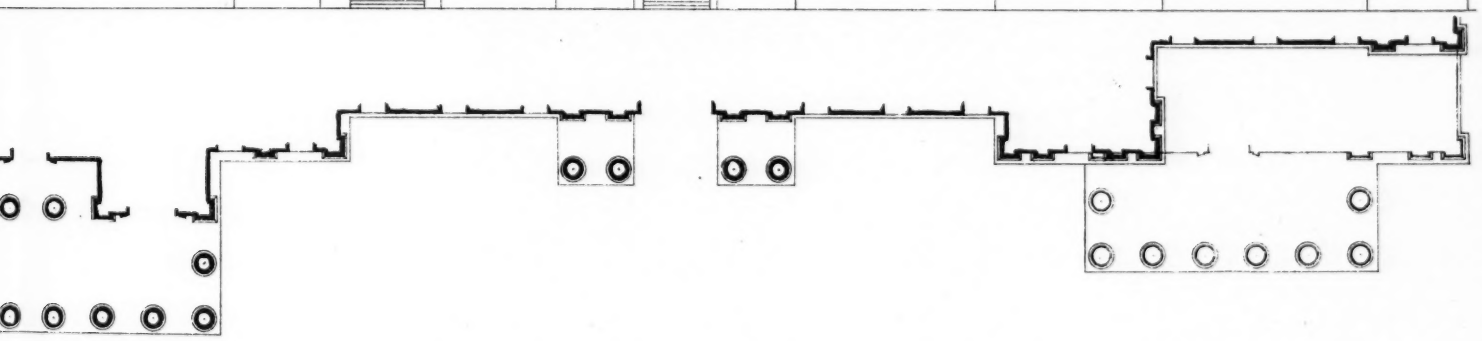

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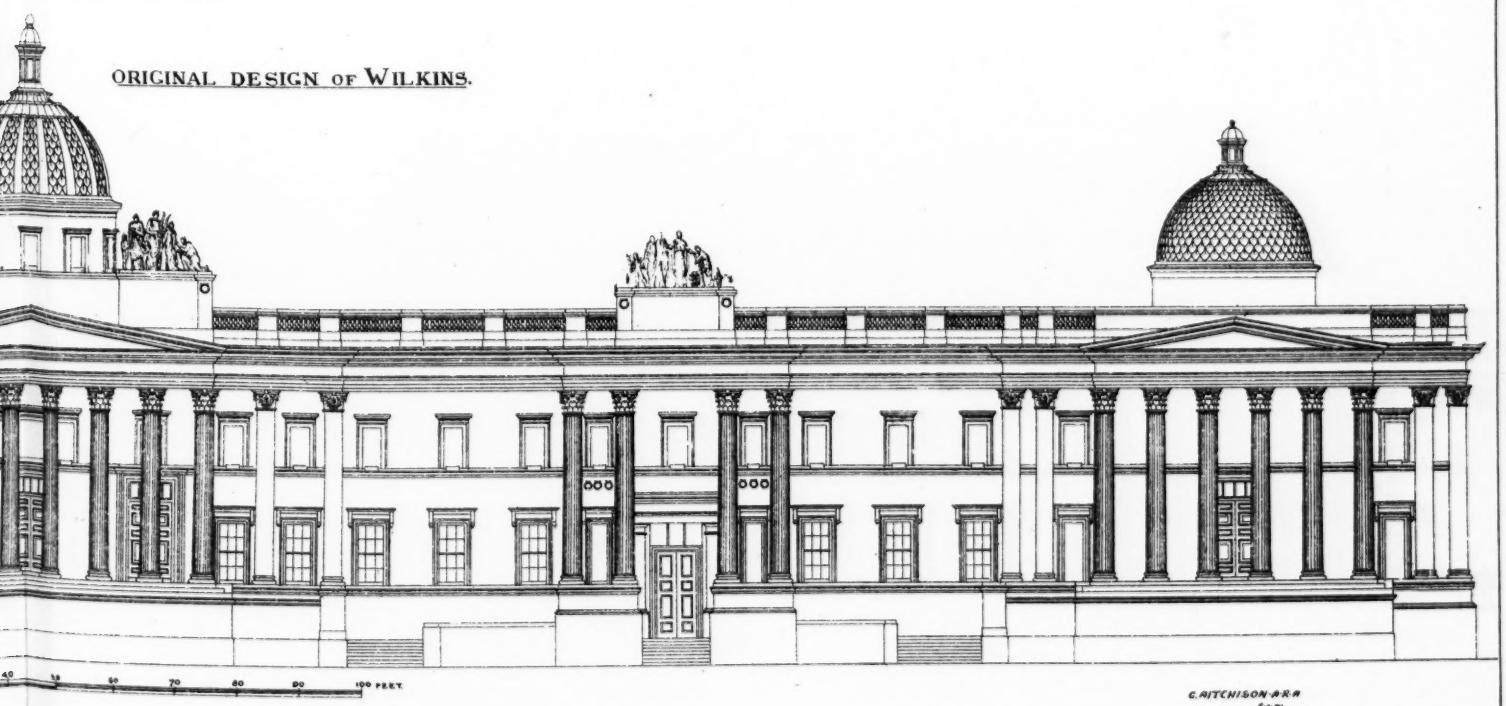

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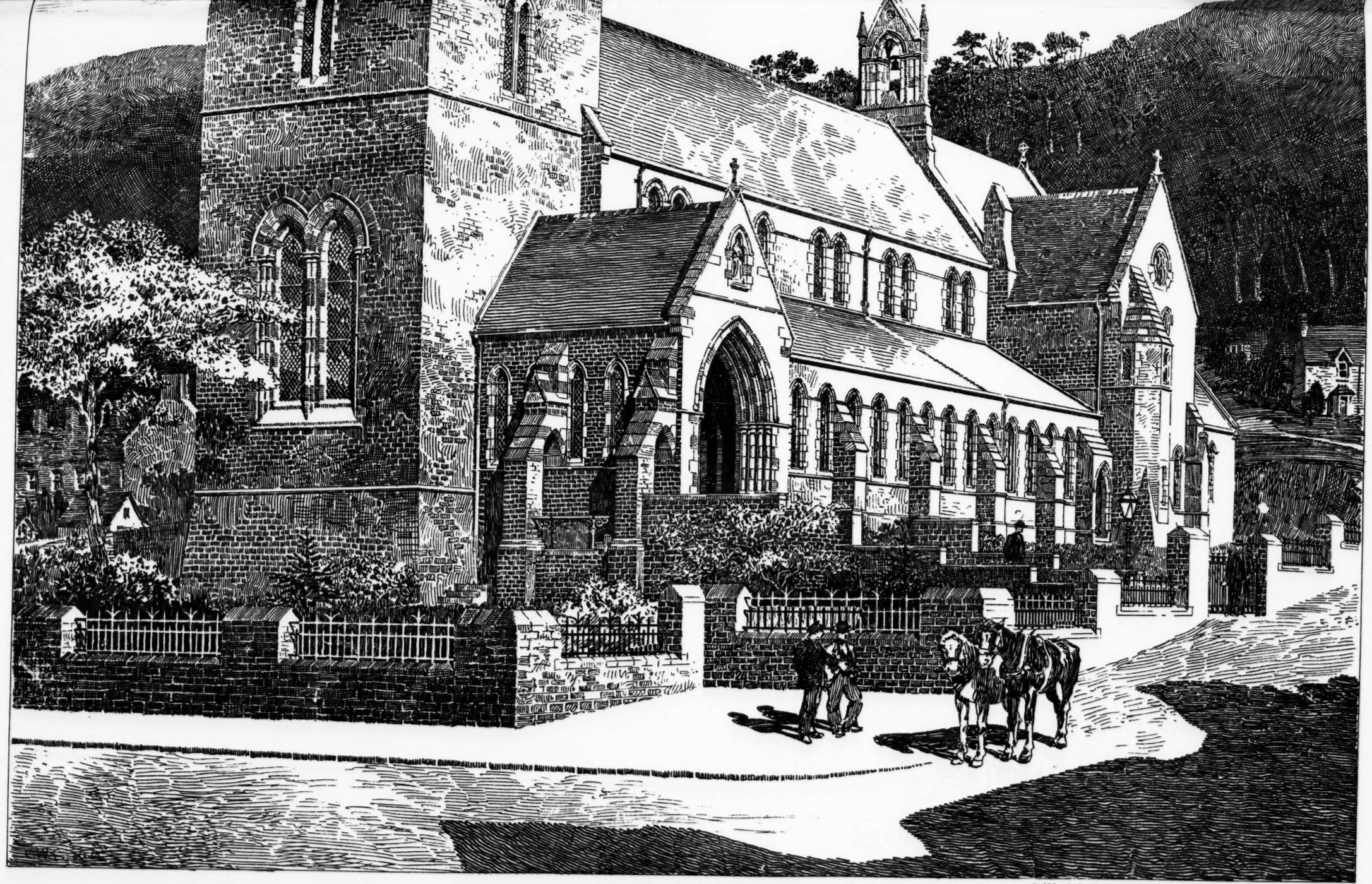

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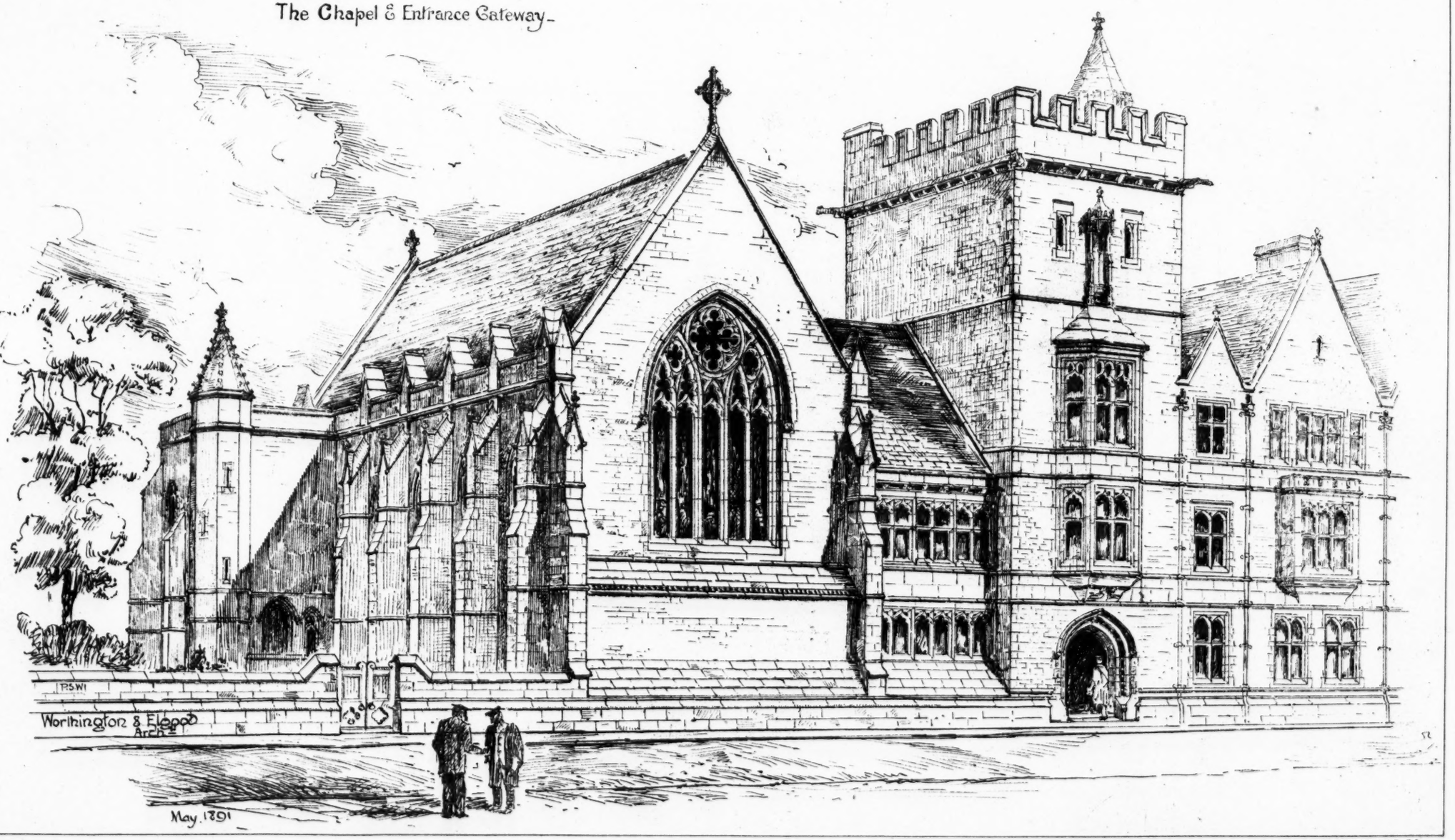

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